Seronegative Spondyloarthropathies

Internal Medicine Half-Day
August 2007
Thomas Jacob, R6
Overview

- Definition
- Role of HLA-B27
- Differential Diagnosis
- Clinical Features
- Radiographic Features
- Treatment
- Cases
- Recap
Definition

- Affects predominantly young men (M:F=3:1, ? underestimation)
- Spondyloarthropathy – axial skeletal involvement with varying degrees of spondylitis and sacroiliitis
- Seronegative – RF and ANA negative
- Enthesopathy – inflammation of tendons and ligaments at their insertion in bone
- Appendicular skeleton may be involved peripheral joints
- Association with HLA-B27
- Extra-articular features
Role of HLA-B27

- Prevalence of HLA-B27 in North American Caucasian Population = 8%
- Prevalence of AS in HLA-B27 positive patients = 2%
- Risk of son (HLA-B27 +ve) developing AS if father has AS = 15%
- Bottom Line....HLA-B27 is not useful diagnostically if there are no clinical features of AS
Differential Diagnosis

- Ankylosing Spondylitis
- Psoriatic
- Reactive
- Inflammatory Bowel Disease
- Undifferentiated Spondyloarthropathy (r/o HIV)
- TB sacroiliitis
- DISH
Inflammatory back pain history

- A.M. stiffness (back, buttock) > 30 minutes
- Improves with exercise, worsens with rest
- If pain wakes patient up at night it is usually in the second half of the night
- Associated with increased ESR/CRP
Clinical Features

- Spondylitis—decreased range of motion
  - Schober and modified Schober tests
  - Finger to floor distance
  - Occiput-to-wall
  - Chest expansion
  - Cervical Spine ROM
  - Thoracic Spine ROM
  - Lumbar Spine ROM
Clinical Features

- Sacroiliitis
  - Buttock pain
  - Tenderness over SI joint (just lateral to PSIS)
  - FABER...elicits pain in contralateral SI joint
  - Gaenslen’s test
  - Vertical Compression
  - Lateral Compression
Clinical Features

- Enthesitis
  - Achilles tendon
  - Plantar fascia
  - Tibial tuberosity
  - Medial / lateral collateral ligaments (knee)
  - Greater trochanter
  - Iliac crest
  - Ischial tuberosity
  - Sternoclaviular joints
  - Costochondral joints
Clinical Features

- Dactylitis
  - Psoriatic (UL and LL)
  - Reactive (predominantly LL)
Clinical Features

- Peripheral Joints
  - Usually an oligoarticular pattern
  - Shoulders and hips in AS
  - Usually non-deforming, rarely deforming
Clinical Features

- Extra-articular
  - Uveitis – up to 25-40% of AS patients, <=5-10% for other spondyloarthropathies
  - Nail changes – psoriatic, reactive
  - Skin
  - CVS – aortic insufficiency
  - RS – UL fibrosis
  - GI
    - in IBD, peripheral arthritis parallels active bowel disease but the spondyloarthropathy does not
    - Crohn’s more commonly associated with peripheral arthritis
    - UC more commonly associated with spondyloarthropathies

- GU
- Amyloidosis
Radiographic Features

Sacroiliitis

- Lower 2/3 (synovial joint)
- Erosions
- Initial pseudo-widening
- Sclerosis of joint margins
- Fusion of SI joints
Radiographic Features

Fusion of SI joint
Radiographic Features

Spondylitis

- Loss of lumbar and cervical lordosis, exaggerated thoracic kyphosis
- Squaring of vertebral bodies
- Shiny corners
- Preserved joint space
- Syndesmophytes
- Apophysial joints involved
- Ankylosis
- Bamboo spine
Radiographic Features

Bamboo Spine
Radiographic Features

Enthesitis
- Soft tissue swelling at tendon/ligament insertion sight
- Reactive new bone
- Erosions
- Bony spurs
Radiographic Features

Upper lobe fibrosis
Radiographic Features

- Symmetric sacroiliitis
  - AS
  - IBD

- Asymmetric sacroiliitis/ Spondylitis
  - Psoriatic
  - Reactive

- No squaring/apophysial involvement seen in IBD, Psoriatic, Reactive
Treatment

- **Spondylitis / Sacroiliitis**
  - Trial of NSAIDS
  - TNF blockers
  - If using TNF blockers in IBD related spondyloarthropathy then use Remicaide or Humira (Enbrel doesn’t work for bowel disease)
Treatment

- Peripheral Arthritis
  - NSAIDs
  - SSZ
  - MTX
  - TNF blockers
Treatment

- Enthesitis
  - NSAIDs (indomethacin trial even if other NSAIDs have failed)
  - Systemic steroids may be effective
  - Steroid injections not very effective
  - Rest, ice
  - OT – heal lifts
  - PT after acute phase
Case 1

- 25 M
- Lower back pain and stiffness x 5 years
- Difficulty tying shoe laces especially in the morning
Case 1

- Pertinent history and physical
  - Morning stiffness x 2 hours
  - Worse in morning and with rest, better with exercise
  - No fevers, chills or sweats
  - No weight loss
  - No weakness, numbness, tingling or incontinence
  - No extra-articular features
  - Tenderness over SI joint, FABER +ve, Occiput-to-wall normal, chest expansion normal, Schober 10-12 cm, Finger-to-floor 10 cm, loss of lumbar lordosis, no neurologic deficit
Case 1

ESR 70
Case 1

- Diagnosis?
  - AS

- Treatment?
  - TNF blocker
Case 2

- 27 M, Filipino descent
- Back pain and stiffness x 10 years, progressively worse
Case 2

Pertinent history and physical

- Lower back and right buttock pain and a.m. stiffness x 3 hours
- Severe functional limitations...unable to tie shoelaces, has difficulty twisting at hips and turning around
- Occasional fevers, chills and sweats
- No weight loss
- No weakness, numbness, tingling or incontinence
- No extra-articular features
- Tenderness over right SI joint, FABER test reproduced right buttock pain, Schober 10-11cm, marked reduction in lumbar spine ROM, occiput-to-wall normal, thoracic expansion 3cm, loss of lumbar lordosis, no neurologic deficit
Case 2

ESR 110
Case 2

- On closer examination,
  - Occult psoriasis behind his ears and at umbilicus
  - Nails were dystrophic, oncholysis present
Case 2

- Diagnosis:
  - Psoriatic Spondyloarthropathy

- Treatment:
  - TNF blocker
Case 3

- 40 F with Crohn’s x 9 years
- Recent flare of Crohn’s with painful swelling of knees and ankles that resolved with prednisone 50 mg daily
Case 3

- Pertinent history and physical
  - Lower back and buttock pain and stiffness x 12 years
  - A.M. stiffness x 2 hours
  - Better with exercise, worse with rest
  - Has remained completely functional
  - No skin lesions
  - Crohn’s currently under control with prednisone weaned to 10 mg daily
  - No extra-articular features
  - Celebrex helps (70% improvement in a.m. stiffness)
  - Tenderness over both sacroiliac joints, FABER positive B/L, rest of exam normal
Case 3

- Diagnosis?
  - IBD related Spondyloarthropathy

- Treatment?
  - NSAIDs
  - TNF blockers if no significant improvement
Case 4

- 37 M
- Presents with lower back pain x 6 months, sausage like swelling of a few of his toes and swelling of his left ankle
Case 4

- Pertinent history and physical
  - Lower back pain is inflammatory with a.m. stiffness x 2 hours, better as day progresses, worse after sitting, no improvement with NSAIDs
  - Back pain and swelling in toes/ankles was preceded by a 2 week history of diarrhea (no blood or mucus), no history of sore throat or STIs
  - Eyes were red with photophobia on 2 occasions (each lasted 2 weeks, no response to topical antibiotics)
  - Restricted ROM in lumbar spine, Schober 10-12cm, loss of lumbar lordosis, no SI joint tenderness demonstrated, left Achilles tendon swollen
  - No rash, no skin lesions on genitals, palms or soles, no oral ulcers
Case 4

ESR 90
Case 4

- Diagnosis?
  - Reactive Spondyloarthropathy

- Other tests?
  - X-rays don’t demonstrate sacroiliitis in first year, MRI would be useful for early changes

- Treatment?
  - SSZ/MTX
  - TNF blockers
DISH vs. AS

- Calcification of anterior longitudinal ligaments
- Usually > 60 yrs
- Degenerative bridging diagonal osteophytes
- Y-shaped lucencies
- Lucency between anterior longitudinal ligament and anterior vertebral body
- No squaring of vertebra
- No apophysial joint involvement
- No SI joint involvement
<table>
<thead>
<tr>
<th></th>
<th>Ankylosing Spondylitis</th>
<th>IBD</th>
<th>Psoriatic</th>
<th>Reactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spondylitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacroiliitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peripheral Arthritis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enthesitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dactylitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iritis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nails</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CVS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GU</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amyloidosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Recap

**Fill out the table**

<table>
<thead>
<tr>
<th></th>
<th>Ankylosing Spondylitis</th>
<th>IBD</th>
<th>Psoriatic</th>
<th>Reactive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spondylitis</strong></td>
<td>Lumbar to thoracic to cervical spine</td>
<td>Less severe</td>
<td>Asymmetric</td>
<td>Asymmetric</td>
</tr>
<tr>
<td><strong>Sacroiliitis</strong></td>
<td>B/L symmetric</td>
<td>B/L symmetric</td>
<td>Asymmetric</td>
<td>Asymmetric</td>
</tr>
<tr>
<td><strong>Peripheral Arthritis</strong></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>Lower limbs predominantly</td>
</tr>
<tr>
<td><strong>Enthesitis</strong></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td><strong>Dactylitis</strong></td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td><strong>Iritis</strong></td>
<td>20-50%</td>
<td>&lt;=5-10%</td>
<td>&lt;=5-10%</td>
<td>&lt;=5-10%</td>
</tr>
<tr>
<td><strong>Skin</strong></td>
<td>-</td>
<td>EN, PG, Sweet’s</td>
<td>Psoriasis (6 types)</td>
<td>KB, CB, oral ulcers</td>
</tr>
<tr>
<td><strong>Nails</strong></td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td><strong>CVS</strong></td>
<td>AI rare</td>
<td>AI rare</td>
<td>AI rare</td>
<td>AI rare</td>
</tr>
<tr>
<td><strong>RS</strong></td>
<td>UL fibrosis</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>GI</strong></td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td><strong>GU</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td><strong>Amyloidosis</strong></td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Questions?