Approach To Arthritis

T.P. Sudha Rao, MD
McGuire VA Medical Center
Richmond, VA

Objectives
• Evaluation of joint pain
• Diagnostic studies
• Differential diagnosis

History
• Onset
• Localization of pain
• Character of pain
• Morning stiffness
• Weakness
• Other

Review of Systems
• Pertinent to CTD

Malar rash

Discoid rash
Barium swallow showing achalasia

Chest x-ray with interstitial lung disease

Raynaud's phenomena

SLE: Nervous System Disorders
- Seizures
- Headache
- Stroke syndromes
- Transverse myelitis
- Coma
- Demetia
- Ataxia
- Rigidity, tremor
- Chorea
- Aseptic meningitis
- Psychiatric disorders

Diagnostic Tests
- Blood work
- Urinalysis
- Radiography
- Synovial fluid analysis

Rheumatoid Factors

ACR
Diseases Associated With Positive RF

- Rheumatic diseases
- Acute viral infections
- Parasite infections
- Chronic inflammatory diseases
- Hyperglobulinemic states

ANA Pattern and Disease

- Homogeneous
  - SLE, DLE, SJOGRENS, PSS
- Speckled
  - MCTD, SLE, PSS, SJOGRENS
- Nucleolar
  - SLE, PSS, SJOGRENS
- Rim
  - SLE

ANA Patterns, upper right: homogenous, lower right: nucleolar, lower left: speckled, upper left: rim pattern

X-ray of knees: OA

X-ray of knees: RA

Synovial Effusions: Classification

<table>
<thead>
<tr>
<th>Type of Fluid</th>
<th>Special Features</th>
<th>Leukocytes/mm³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Clear, Colorless Viscous</td>
<td>&lt;200 (&lt;25% PMNs)</td>
</tr>
<tr>
<td>Noninflammatory</td>
<td>Clear, Yellow Viscous</td>
<td>200-2,000 (&lt;25% PMNs)</td>
</tr>
<tr>
<td>Inflammatory</td>
<td>Cloudy, Yellow, Watery, Glucose may be low</td>
<td>2,000-100,000 (&gt;50% PMNs)</td>
</tr>
<tr>
<td>Septic</td>
<td>Purulent</td>
<td>&gt;80,000 (75% PMNs)</td>
</tr>
</tbody>
</table>

ACR
Monosodium urate crystals in PMN

Urate crystals, negative birefringence

CPPD crystals

Differential Diagnosis
• Inflammatory monoarthritis
• Inflammatory polyarthritis
• Inflammatory spondyloarthritis
• Degenerative arthritis

Acute Monoarthritis: Selected Causes
• Noninflammatory
  – Trauma
  – Sickle Cell disease
  – Osteonecrosis
• Inflammatory
  – Crystals
  – Bacteria
  – Spondyloarthopathies
  – Palindromic rheumatism
  – Rheumatoid arthritis
  – Juvenile chronic arthritis

Differential Diagnosis Of Inflammatory Polyarthritis
• Rheumatoid arthritis
• SLE
• MCTD
• Crystal induced arthritis
• Polymyalgia rheumatica
Differential Diagnosis Of Spondyloarthritis

- Ankylosing spondylitis
- Reiters syndrome
- Psoriatic arthritis
- Inflammatory bowel disease

Hand RA, has swelling of wrists, MCPs and PIPs, which is symmetric.

Hand OA, swelling of 2nd and 4th PIPs on both hands, Heberdens nodes on the 2nd, 3rd, 4th DIPs on the right, and 4th DIP on the left.
Erosive OA of hands, changes involve several PIPs and DIPs, no MCP involvement.

Gout, involvement of several hand joints with tophi, can look like Rheumatoid arthritis.

Psoriatic arthritis, inflammation of the DIP with nail changes.
Hand x-ray, early RA, periarticular osteopenia of the wrists and MCPs.

Hand x-ray, OA, joint space narrowing of 1st carpo metacarpal joint, 2nd and 3rd MCPs, several PIPs and DIPs, with osteophyte formation of PIPs and DIPs.

Systemic vasculitis, hand findings: periungual and subungual petechial lesions.
Hypersensitivity vasculitis of hands, purpuric lesions over the fingers.