Rheumatology Tips and Pearls

Andrew J. Gross, MD
Rheumatology Clinic Chief
Associate Clinical Professor
University of California, San Francisco

Disclosures

• None
Objectives

• Recognize the key features of polymyalgia rheumatica
• Recognize inflammatory back pain
• Know the differential diagnosis of subacute monoarticular arthritis

Clinical Case #1

• A 66 year old man comes to see you complaining of shoulder pain. The pain came on suddenly about 3 weeks ago, initially affecting his right shoulder and then the left. The pain radiates down into the upper arms and somewhat across his upper back and is exacerbated by shoulder abduction.
• He also complains of new onset lower back and hip discomfort.
Clinical Case #1 - Question

You diagnose him with Polymyalgia Rheumatica (PMR). All of the following symptoms tipped you off to the diagnosis of PMR EXCEPT:

a. Morning stiffness lasting >45 minutes
b. Pain & stiffness affects the lower back and pelvic girdle
c. Pain & stiffness improves with activity
d. ESR >40 mm/hr
e. ANA 1:320 speckled pattern


Some Tips about PMR

- Typical distribution of PMR symptoms...
- Subdeltoid bursitis & biceps tenosynovitis are common in one or both shoulders
- Patients may develop adhesive capsulitis

Some more Tips about PMR

- PMR is uncommon in patients < 60 years old
- ESR is helpful - but it is <40 mm/hr in 10-20% of patients
  - CRP can be helpful when ESR is <40
- ANA test is not associated with PMR (but is more commonly positive in older adults)


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• 15% will have Giant Cell Arteritis (new onset head pain)
  – New onset head pain
  – Scalp tenderness
  – Jaw claudication when chewing
  – Sudden vision loss or diplopia


Things patients with PMR often tell me

• “I feel like I am 100 years old!”
• “I need to crawl out of bed in the morning”
• “I feel okay as long as I keep moving, but I stiffen up like the Tin-man as soon as I sit down”
• “That prednisone is a miracle”
When To Refer PMR to a rheumatologist:

Rheumatologists are pleased to see cases of PMR
Consider referring when:

- Your patient has only a partial response to treatment with prednisone – most patients should have a very good response to 15-20 mg/d of prednisone.
- Your patient reflares whenever you try to taper the prednisone dose
- Your patient has any symptoms of Giant Cell Arteritis (and send to an ophthalmologist for consideration of temporal artery biopsy).

Clinical Case #2

- A 26 year old man comes to see you complaining of shoulder pain. The pain came on about 3 weeks ago, initially affecting his right shoulder and then the left. The pain does not radiate. Range of motion of motion of both shoulders is limited.
- He also notices pain and stiffness in his neck and lower back. This is worse recently, but has been present on and off for the past couple of years.
- He complains of a hour of morning stiffness in his shoulders and low back.
Clinical Case #2

- The shoulder exam is notable for limitation in shoulder ROM (abduction, internal & external rotation) without weakness in the rotator cuff muscles. There is some tenderness over the glenohumeral joint. No effusion.
- Cervical spine flexion & rotation as well as lumbar spine flexion are somewhat limited. Straight leg raise is unremarkable.
- Hip rotation is also somewhat limited.
- The remainder of the joint exam is unremarkable.

Clinical Case #2

Which of the following conditions is the most likely cause of this man's shoulder, neck and lower back pain:
- a. Ankylosing Spondylitis
- b. Polymyalgia Rheumatica
- c. Rheumatoid Arthritis
- d. Systemic Lupus Erythematosus
- e. Calcium Pyrophosphate Dihydrate Disease (CPPD)
Typical distribution of involved joints in rheumatoid arthritis (and lupus)

Rheumatoid Arthritis  Psoriatic Arthritis  Ankylosing Spondylitis  Osteoarthritis

https://dundeemedstudentnotes.wordpress.com/2014/06/16/polyarthritis/
Ankylosing Spondylitis

Normal spine  Early ankylosing spondylitis  Advanced ankylosing spondylitis

Inflammation  Fusion

Ankylosing Spondylitis - sacroiliitis
Ankylosing Spondylitis

**DIAGNOSIS**

<table>
<thead>
<tr>
<th>Non-radiographic stage</th>
<th>Radiographic stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back pain</td>
<td>Back pain</td>
</tr>
<tr>
<td>Sacroiliitis on MRI</td>
<td>Radiographic</td>
</tr>
<tr>
<td></td>
<td>sacroiliitis</td>
</tr>
<tr>
<td></td>
<td>Back pain</td>
</tr>
<tr>
<td></td>
<td>Syndesmophytes</td>
</tr>
</tbody>
</table>

Clinical Case #2

All of the following symptoms are associated with Ankylosing Spondylitis EXCEPT:

b. Onset of back pain was insidious
c. Back pain & stiffness gets worse at night
d. Burning pain in the thighs with standing
e. Symptoms began before age 40

Inflammatory Back Pain:

Hallmark Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Odds Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insidious onset</td>
<td>12.7</td>
</tr>
<tr>
<td>Pain at night (with improvement upon getting up)</td>
<td>20.4</td>
</tr>
<tr>
<td>Age at onset &lt;40 years</td>
<td>9.9</td>
</tr>
<tr>
<td>Improvement with exercise</td>
<td>23.1</td>
</tr>
<tr>
<td>No improvement with rest</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Sensitivity 79.6% & Specificity 72.4%
Positive LR = 79.6/(100-72.4) = 2.9 ~ Probability = 14%

When to refer a patient with back pain to a rheumatologist

Inflammatory Back Pain Plus:
- HLA-B27+ (present in 85-95% of patients with AS)
- Family history of Ankylosing Spondylitis
- Elevated c-reactive protein (CRP)
- Sacroiliitis on imaging (x-rays or MR)


AS: Treatment

Axial disease only

NSAID → NSAIDs → sulfasalazine → TNF inhibitors

Physical Therapy

Clinical Case #3

• 45 year old man comes to see you with left knee swelling for the past 7 days. He has no other complaints. No recent or prior trauma.
• ROS is unremarkable. No fevers or rashes
• Physical Exam: unremarkable except for swelling and warmth of the left knee with limited ROM.

Clinical Case #3

To identify the cause of the knee swelling, what is the best next test to obtain:

A. Aspirate Knee Fluid for cell count and crystal search
B. MRI of knee
C. X-ray of knee
D. CBC with Differential
E. Rheumatoid factor & CCP antibody
Differential Diagnosis of Sub-Acute Monoarticular Arthritis

**Non-Inflammatory**
- Cartilage or ACL tear
- “Flare” of osteoarthritis
- Mimics of joint swelling
  - Prepatellar bursitis
  - Body habitus (adipose tissue) and tendinitis

**Inflammatory**
- Infectious
  - Lyme Disease
  - Gonococcus
- Crystal
  - CPPD
  - Gout
- Autoimmune
  - Spondyloarthritis
  - Palindromic rheumatism
  - Other systemic disease

**Aspirate the Knee!**

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**Synovial Fluid Analysis**

**Cell Count & Crystal Search**
- Green top tube preferred (lavender top tub will work)
- 1-10 cc
- CPT: 89051; 89060
- Refrigerated (do not freeze)
- Okay for up to 2 days

**Quest Diagnostics**
- Test Code 4707

**LabCorp**
- Test Code 005231

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Zuber TJ, Am Fam Phys 2002
www.aafp.org/afp/2002/1015/p1497.html
### Synovial Fluid Analysis
#### Cell Count & Crystal Search

<table>
<thead>
<tr>
<th>Type</th>
<th>Non-Inflammatory e.g. osteoarthritis</th>
<th>Inflammatory e.g. rheumatoid arthritis</th>
<th>Infectious e.g. crystal or septic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear Viscous amber</td>
<td>Turbid yellow less viscous</td>
<td>Turbid yellow less viscous</td>
</tr>
<tr>
<td>WBC</td>
<td>&lt;2000 cells/mm³</td>
<td>2000 - 50,000 cells/mm³</td>
<td>&gt;50,000 cells/mm³</td>
</tr>
<tr>
<td>Cell Type</td>
<td>Mononuclear</td>
<td>PMNs and/or lymphocytes</td>
<td>PMNs</td>
</tr>
</tbody>
</table>

Zuber TJ, Am Fam Phys 2002
www.aafp.org/afp/2002/1015/p1497.html
Tips on subacute septic arthritis

Erythema Chronicum Migrans

Lyme Disease

- Unlikely unless traveled to Lyme endemic region
- Initial phase with erythema migrans rash & sometimes fever and diffuse arthralgia
- If untreated, later can develop monoarticular arthritis, usually of the knee
- Lyme ELISA & WB will be strongly positive
- No role for testing joint fluid

www.findarthritistreatment.com/eight-causes-of-migrating-arthritis/
Tips on subacute septic arthritis

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Gonococcus
- Sexually transmitted disease
- Classically initially presents with tenosynovitis of the wrist eventually settling in to become a septic joint.
- Can involve multiple joints
- Often with scattered pustular skin rash (easy to miss)
- DNA testing from urine and throat swab.
- No role for culture from blood or joint fluid.

Forms of Spondyloarthritis

Psoriatic Arthritis
Acute Anterior Uveitis
Juvenile SpA
Ankylosing Spondylitis (AS)
Arthritis associated with Inflammatory Bowel Disease
Undifferentiated (uSpA)
Reactive Arthritis (Reiter’s)
Tips on spondyloarthritis

Reactive arthritis
- Sterile oligoarticular arthritis, usually of lower extremities
- Develops **10-14 days** following an infectious process, usually dysentery or chlamydia urethritis
- Sometimes associated with
  - Conjunctivitis or uveitis
  - Urethritis (independent of Chlamydia)
- More than 50% of cases will resolve in <6 months.

Psoriatic Arthritis
- Occurs in 15% of patients with psoriasis
- More common in people with psoriasis affecting the scalp or diffuse severe disease

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Clinical Case #5

A 50 year old healthy active woman comes to see you for an acute exacerbation of chronic mild shoulder pain. The pain is now much more severe with active shoulder abduction, but there is no weakness on rotator cuff muscle testing.

Case 5: A 50 year old healthy active woman with severe exacerbation of chronic right shoulder pain. Which image is most likely associated with her disorder?
A. Rheumatoid arthritis (late disease)
B. Milwaukee Shoulder Syndrome (apatite-associated destructive arthritis)
C. Calcific Tendinitis
D. Rotator cuff tear

Summary

- Don’t diagnose patients <50 y.o. with PMR
- Recognize inflammatory back pain
- Aspirate swollen joints
- Recognize calcific tendinitis
Thanks!

Bonus Slides
Pattern of Joint Involvement

All of the following conditions often involve the MCP joints and wrists EXCEPT:

A. Osteoarthritis
B. Rheumatoid Arthritis
C. SLE
D. Parvovirus B19 arthritis

Pattern of Joint Involvement

All of the following conditions commonly involve MCP joints, wrists and knees EXCEPT:

A. Osteoarthritis
B. Rheumatoid Arthritis
C. SLE
D. Parvovirus B19 induced arthritis

- SLE typically has extra-articular manifestations (rashes)
- Viral Arthritis typically resolves in <6 weeks although Chikungunya can last longer
Osteoarthritis

- Osteoarthritis of the hands is common and rheumatology consultation is usually not necessary. It can be managed with:
  - Acetaminophen 1 gm three times a day
  - NSAIDs if normal kidney function and no risk factors for gastritis
  - Topical Diclofenac 1% gel
  - Hand Therapy
  - Paraffin baths

See American College of Rheumatology Guidelines - www.rheumatology.org