

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

# **GENERAL CONCEPTS IN RHEUMATOLOGY**

Dr. Sahar Abd Elrahman

# WHY EVEN CARE?

- ▶ 2002 CDC reported arthritis as the leading cause of disability in the US.
- ▶ 55.4 million have chronic joint symptoms lasting for more than 3 months
- ▶ 21.5 million have not seen a physician

- ▶ 2 million have activity limitations
- ▶ 25% will be unable to work within 7 years of disease onset
- ▶ Direct and indirect costs are estimated at 1% of the US gross domestic product = \$86.2 billion

# Musculoskeletal Complaint



Joint Pain

Joint Swelling

Diffuse/Systemic Sxs

## Initial Rheumatic History and Physical Exam to Determine:

1. Is it articular
2. Is it acute or chronic?
3. Is inflammation present?
4. How many/which joints are involved?
5. Are there **RED FLAGS**?

# GOALS OF ASSESSMENT

- ▶ Identify “Red Flag” conditions
  - ⚡ Conditions with sufficient morbidity/mortality to warrant an expedited diagnosis
- ▶ Make a timely diagnosis
  - ▶ Common conditions occur commonly
  - ▶ Some conditions require serial evaluation over time to make a Dx
- ▶ Provide relief, reassurance and plan for evaluation and treatment

# RED FLAG CONDITIONS

- ▶ FRACTURE
- ▶ INFECTION
- ▶ ORGAN INVOLVEMENT

# ARTICULAR VS. PERIARTICULAR

Finding

**ARTICULAR**

**PERIARTICULAR**

**Pain**

Diffuse, deep  
tenderness

"point"

**ROM Pain**

Active+passive  
in all planes

Active motion  
in few planes

**Swelling**

Common

Uncommon

# ARTICULAR VS. PERIARTICULAR

<b>Finding</b>	<b>ARTICULAR</b>	<b>PERIARTICULAR</b>
<b>Pain</b>	Diffuse, deep tenderness	"point"
<b>ROM Pain</b>	Active+passive in all planes	Active motion in few planes
<b>Swelling</b>	Common	Uncommon



# INFLAMMATORY VS NONINFLAMMATORY

Feature	Inflammatory	Noninflammatory
Pain (worse when?)	Yes (morning)	Yes (night)
Swelling	Soft Tissue (+ effusion)	Bony
Erythema	Sometimes Present	Absent
Warmth	Sometimes Present	Absent
Morning Stiffness	Prominent ( > 1 hr.)	Minor ( < 45 min.)
Systemic Features+	Sometimes Present	Absent
Elevated ESR or CRP*	Frequent	Uncommon
Synovial Fluid WBC	WBC > 2,000 /mm <sup>3</sup>	WBC < 2,000 /mm <sup>3</sup>
Examples	Septic arthritis, RA, Gout, Polymyalgia rheumatica	Osteoarthritis, Adhesive Capsulitis, Osteonecrosis

+ fever, rash, weight loss, anorexia, anemia

\* ESR: erythrocyte sedimentation rate; CRP: C-reactive protein

# FORMULATING A DIFFERENTIAL DX

Condition	Articular	Nonarticular
Inflammatory	Septic Gout Rheumatoid arthritis Psoriatic arthritis	Bursitis Enthesitis PMR Polymyositis
Noninflammatory	Osteoarthritis Charcot Joint	Fibromyalgia Carpal tunnel fracture

# ONSET & CHRONOLOGY

- ▶ **Acute:** Fracture, septic arthritis, gout, rheumatic fever, Reiter's syndrome
- ▶ **Chronic:** OA, RA, SLE, psoriatic arthritis, fibromyalgia
- ▶ **Intermittent:** gout, pseudogout, palindromic rheumatism, Behcet's, Familial Mediterranean Fever

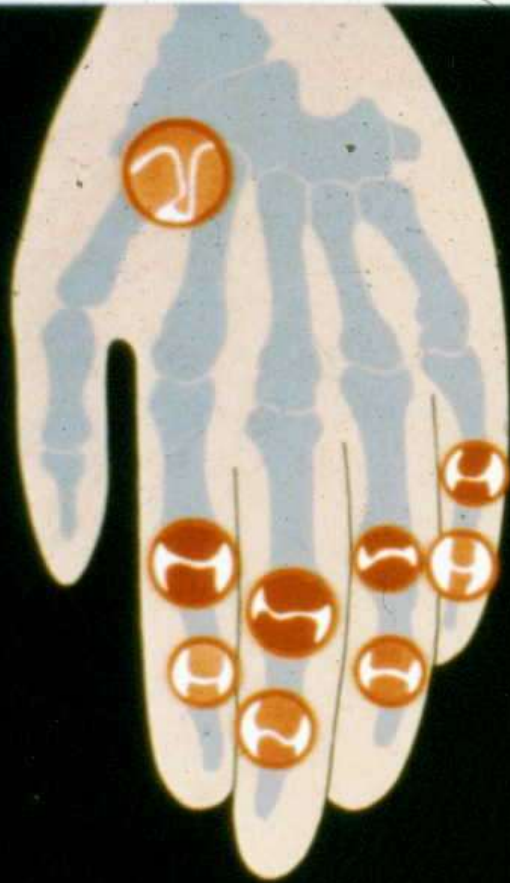
▶ **Additive:** OA, RA, Reiter's syndrome,

psoriatic

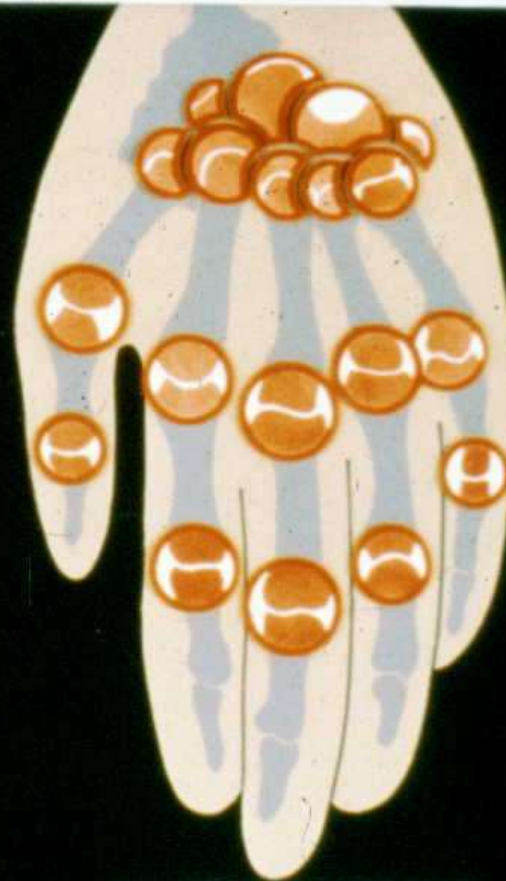
▶ **Migratory:** Viral arthritis (hepatitis B),

rheumatic fever, GC arthritis, SLE

# Location



**OSTEOARTHRITIS**



**RHEUMATOID  
ARTHRITIS**

# ARTHRITIS

- ▶ **S**welling : 2 p
  - ▶ **T**enderness : T
  - ▶ **W**armth : 1 p
  - ▶ **L**imitation of Motion : 1 p
  - ▶ **R**edness : 1 P
- 
- ▶ **Arthritis**  $\geq T + 2 p$



# MONO/OLIGO VS POLYARTICULAR

## Less than 4 joints

- ▶ Osteoarthritis
- ▶ Gout or Pseudogout
- ▶ Septic arthritis
- ▶ Reactive arthritis
- ▶ Tuberculous/Fungal arthritis

## 4 or more joints

- ▶ Osteoarthritis
- ▶ Rheumatoid arthritis
- ▶ Psoriatic arthritis
- ▶ Viral arthritis
- ▶ Juvenile arthritis
- ▶ SLE/MCTD

**Musculoskeletal Complaint** → **Initial Rheumatic History and Physical Exam to Determine:**

1. Is it articular
2. Is it acute or chronic?
3. Is inflammation present?
4. How many/which joints are involved?

**Nonarticular Condition**

- Trauma/Fracture
- Fibromyalgia
- Polymyalgia Rheumatica
- Bursitis
- Tendinitis

**Is it Articular?**

No

Yes

**Is Complaint > 6 wks Duration?**

No

Yes

**Acute**

**Chronic**

**Acute Arthritis**

- Infectious Arthritis
- Gout
- Pseudogout
- Reiter's Syndrome
- Initial Presentation of Chronic Arthritis

**Is Inflammation Present?**

1. Is there prolonged AM stiffness?
2. Is there soft tissue swelling?
3. Are there systemic symptoms?
4. Is the ESR or CRP elevated?

Yes

**Chronic Inflammatory Arthritis**

**How Many Joints Involved?**

<4

4+

**Chronic Inflammatory Mono/oligoarthritis**  
Consider:

- Indolent infection
- Psoriatic Arthritis
- Reiter's Syndrome
- Pauciarticular JA

**Chronic Inflammatory Polyarthritis**

**Consider:**

- Psoriatic Arthritis
- Reiter's Syndrome

**Is it Symmetric?**

Yes

**Are PIP, MCP or MTP Joints Involved?**

Yes

**Rheumatoid Arthritis**

**Chronic Noninflammatory Arthritis**

**Are DIP, CMC, Hip or Knee Involved?**

No

Yes

Unlikely to be Osteoarthritis

**Consider:**

- Osteonecrosis
- Charcot Arthritis

**Osteoarthritis**

**Consider:**

- SLE
- Scleroderma
- Polymyositis

No



# KNOW IT WHEN YOU SEE IT

- Hard bony enlargements
- Heberden's nodes at the DIP joints
- Bouchard's nodes at the PIP joints
- Often have “squared” first CMC joint due to osteophytes at that joint



**Osteoarthritis**

# KNOW IT WHEN YOU SEE IT

- Soft synovial swelling
- Synovitis and volar subluxation at the MCP joints
- Synovitis of the wrists
- Synovitis of the PIP joints with early swan neck deformities



Rheumatoid arthritis

# RHEUMATOID ARTHRITIS: LATE STAGES



- Deformities
- Nodules
- Tendon Rupture

# KNOW IT WHEN YOU SEE IT



Jaccoud's Deformity of SLE



# KNOW IT WHEN YOU SEE IT

Often associated with:

- Inflammatory eye disease
- Balanitis, oral ulceration, or keratoderma
- Enthesopathy
- Sacroiliitis



Seronegative spondyloarthropathy

# KNOW IT WHEN YOU SEE IT

- Inflammation of the DIP joints
- Sausage fingers
- Joint involvement shows radial pattern
- Nail changes
- Psoriatic patches
- Arthritis may start before the skin



Psoriatic arthritis

# KNOW IT WHEN YOU SEE IT

- May look like psoriasis or syphilis
- Can occur in patches or as sterile pustules



Keratoderma blennorrhagica in Reiter's syndrome

# KNOW IT WHEN YOU SEE IT

- “Butterfly”/Malar rash
- Involves cheeks, spares nasolabial fold



Systemic lupus erythematosus



# KNOW IT WHEN YOU SEE IT



**Dermatomyositis**



**Interarticular dermatitis of SLE**

Both have periungual erythema

# KNOW IT WHEN YOU SEE IT



“Mantle” aka “Shawl” Sign of Dermatomyositis

# KNOW IT WHEN YOU SEE IT

- Appears in a broad-based interrupted pattern in systemic vasculitis, including SLE
- May occur as a fine, connected, lacy pattern in normals



Livedo reticularis

# KNOW IT WHEN YOU SEE IT

- Can be 1° or 2°
- Stress/cold can trigger
- Keep extremities and body warm



Raynaud's phenomenon



# KNOW IT WHEN YOU SEE IT



- ▶ Tophi appear rather late in gout
- ▶ Prick the tophus with a needle. Put the drop of material on a slide

Gout