

Approach Patient with Arthritis

Introduction

- ◆ Causes include various self-limited illness and disabling and life-threatening.
- ◆ Musculoskeletal emergencies (infection, sepsis, compartment syndrome...).

A careful history and physical examination are the most important tools.

Laboratory testing and imaging studies provide definitive answers in only a few instances.

Many chronic polyarticular diseases require months or years to diagnose (delayed extra-articular, lab and radiographic findings)

History Taking

Is it Arthritis or Arthralgia?

Common causes of arthralgia

- ◆ Fibromyalgia
- ◆ Bursitis
- ◆ Tendinitis
- ◆ Hypothyroidism
- ◆ Neuropathic pain
- ◆ Metabolic bone disease
- ◆ Depression

Number of joints and Acuteness of symptoms

Acute monoarthritis: common causes

- A. Inflammatory.
 - ◆ Crystal arthritis.
 - ◆ Septic
 - ◆ Spondyloarthropathy.
 - ◆ Palindrome Rheumatism
 - ◆ Rheumatoid arthritis (RA).
 - ◆ Juvenile chronic arthritis.
 - ◆ Sarcoid arthritis
- B. Non-inflammatory
 - ◆ Trauma
 - ◆ Sickle-cell Arthropathy.
 - ◆ Osteonecrosis.

Chronic monoarthritis: common causes

- A. Non-inflammatory
 - ◆ Osteoarthritis
 - ◆ Mechanical derangement.
 - ◆ Osteonecrosis.
 - ◆ Neuropathic arthropathy.
 - ◆ Reflex Sympathetic Dystrophy (RSD).
 - ◆ Adjacent Bone lesion (Tumor, Infection)
- B. Inflammatory.
 - ◆ Infectious (TB, Fungal, Lyme disease).
 - ◆ Crystal arthritis.
 - ◆ RA.
 - ◆ Juvenile chronic arthritis.
 - ◆ Spondyloarthropathy.
 - ◆ Hemophilic Arthropathy.
 - ◆ Synovial neoplasms.
 - ◆ Pigmented villonodular synovitis

Acute polyarthritis: common causes

- A. Infection-related
 - ◆ Bacterial species
 - ◆ Neisseria species
 - ◆ Lyme disease.
 - ◆ Rheumatic fever.
 - ◆ AIDS
 - ◆ Viral arthritis
- B. Non-infectious causes.
 - ◆ RA.
 - ◆ Juvenile chronic arthritis.
 - ◆ Other Connective Tissue diseases.
 - ◆ Spondyloarthropathy.
 - ◆ Gout and pseudogout.
 - ◆ Henoch-Schonlein purpura.
 - ◆ Sickle-cell Arthropathy.
 - ◆ Hypertrophic osteoarthropathy.
 - ◆ Sarcoidosis
 - ◆ Leukemia.

Intermittent arthritis: common causes

- ◆ Mechanical
- ◆ Loose Bodies disease
 - Partial tears
 - Ligament laxity
- ◆ Crystals

- Gout
- Pseudogout
- Hydroxyapatite
- ◆ Infection
 - Lyme disease.
 - Whipple's disease
- ◆ Palindromic Rheumatism
- ◆ Intermittent Hydroarthrosis
- ◆ Episodic RA
- ◆ Familial Mediterranean Fever.
- ◆ Sarcoidosis

Chronic polyarthritis: common causes

- ◆ Osteoarthritis
- ◆ Rheumatoid arthritis (RA).
- ◆ Juvenile chronic arthritis.
- ◆ Other Connective Tissue diseases.
- ◆ Spondyloarthropathy.
- ◆ Chronic crystal arthritis.
- ◆ Hypertrophic osteoarthropathy.
- ◆ Hypothyroidism.
- ◆ Metabolic and infiltrative bone and joint diseases.

Temporal pattern of joint involvement in polyarthritis

- ◆ Migratory pattern: Arthritis in certain joints remit to reappear in other joints e.g Rheumatic fever, Gonococcal arthritis, Viral Arthritis, Acute Leukemia
- ◆ Additive pattern: Arthritis persists, with subsequent involvement of other joints e.g RA, SLE.
- ◆ Intermittent pattern: Repetitive attacks of acute polyarthritis with complete remission between attacks e.g RA, polyarticular gout, sarcoid arthritis, Reiter's syndrome & psoriatic arthritis.

Age

- ◆ <30= SLE, Ankylosing spondylitis, Reactive Arthritis.
- ◆ 30-50= RA, Systemic sclerosis, Gout.
- ◆ >50= OA, Pseudogout, PMR

- ◆ Any Age group= Psoriatic arthritis, Enteropathic arthritis

Sex

- ◆ >Female: SLE, RA, OA, Systemic sclerosis, PMR.
- ◆ Male=Female: Psoriatic arthritis, Pseudogout, Enteropathic arthritis.
- ◆ >Male: Gout, Ankylosis spodylitis, Reactive Arthritis.

Distribution of joint involvement

- ◆ Symmetrical: RA, psoriatic A. (RA-like), 1ry OA, SS
- ◆ Asymmetric: LL>UL: Sero – ve arthropathy, gout
- ◆ Large joints: OA, Reactive
- ◆ PIP or DIP, MCP and PIP: RA, SLE
- ◆ DIP: psoriasis, gout, 1ry OA
- ◆ 1st MTP= Gout, OA
- ◆ Spine= OA, Ankylosis spodylitis, Psoriatic arthritis, Reactive arthritis
- ◆ Shoulder= PMR

Pain character

- ◆ Aggravated by motion= Mechanical
- ◆ Relieved by motion= Inflammatory.

Duration

- ◆ <6 wks= viral arthritis, systemic rheumatic diseases
- ◆ >6 wks= systemic rheumatic diseases

Associated Symptoms

- ◆ Morning stiffness: >1hr= RA, PMR, Inflammatory, < 30 min= OA
- ◆ Multi-system involvement= Systemic rheumatic diseases.
- ◆ Fever= infection, reactive arthritis, RA, SLE, Crystal induced arthritis...

Past Medical history: Trauma, fracture, surgical procedures...

Medication list: Drug induced lupus, diuretics inducing gout.

Physical Examination

Inspect for:

- ◆ Skin manifestations: SLE, Psoriasis, Dermatomyositis, sarcoidosis, Behcet, Rheumatic fever, Cryoglobulinemia, HSP, Still's disease.
- ◆ Subcutaneous nodules: RA, RHD, Gout (tophi), 1ry OA
- ◆ Parotid enlargement: Sjogren's
- ◆ Mucocutaneous:
 - Oral ulcer: Reiter's, Behcet, SLE
 - genital ulcer: Reiter's, Behcet
- ◆ Nail changes: Psoriasis
- ◆ Eye: RA, AS, Reiter's, Behcet, Sarcoidosis
- ◆ Nose: Wegner's granulomatosis, relapsing polychondritis.
- ◆ Ear: Relapsing polychondritis.

Joints examination

- ◆ Soft tissue swelling, warm, effusion...= Inflammation.
- ◆ Normal passive motion with limited active motion= bursitis, tendinitis, muscle injury.
- ◆ Limited passive and active motion = Synovitis
- ◆ Erythematous Joint
 - Gout, chondrocalcinosis
 - Septic arthritis.
 - Rheumatic fever
 - Leukemia
 - RSD
- ◆ Deformity
 - RA
 - Psoriasis
 - SS-Sclerodactyly (flexion contof fingers)
 - SLE- Jaccoud Arthropathy.
 - Sickle cell disease
- ◆ Associated Tenosynovitis
 - RA,
 - Gout,
 - Reiter's syndrome,
 - Gonococcal arthritis.

- TB arthritis.
- Fungal arthritis.

Systemic Examination

- ◆ Nervous System: SLE, Behcet, vasculitis
- ◆ Lung and pleura: RA, SLE, SS, PM,
- ◆ Lung: Sarcoidosis, Vasculitis.
- ◆ Peri- and myocardium: RA, SLE, SS, PM.
- ◆ Heart valve: Rheum fever, RA, SLE, Reiter's S.
- ◆ Kidney: SLE, vasculitis, Polyarticular gout.
- ◆ GIT: Reiter's, IBD, SS.
- ◆ Liver: HCV, SS, IBD, sarcoidosis.

Laboratory Studies

- ◆ Can be misleading.
- ◆ Basic: CBC, Urinalysis, RFT, LFT.
- ◆ Acute phase reactant: ESR, CRP.
- ◆ Uric acid concentration= Gout
- ◆ CK: PM/DM, hypothyroidism
- ◆ Ca^{+2} , P^{+3} : endocrinal, metabolic
- ◆ Antibody tests:
 - ANA= SLE
 - Anti-dsDNA= SLE
 - Anti-native DNA, anti-Sm= SLE
 - RF= RA
 - Anti-CCP antibody= RA
- ◆ Hepatitis B and C
- ◆ Salmonella, brucella Serology: ReA,
- ◆ Parvovirus serology
- ◆ Rheumatoid Factor
 - Rheumatoid Arthritis
 - Connective tissue diseases
 - Viral infection
 - Leishmaniasis
 - Leprosy
 - Tuberculosis
 - Sarcoidosis
 - Liver diseases
 - Subacute bacterial endocarditis

Imaging Studies

- ◆ X-ray:

- Chronic Gout
- Ankylosing spondylitis.
- ◆ MRI:
 - Ankylosing spondylitis. Internal derangement,
 - Avascular necrosis, Osteomyelitis,
 - Pigmented villonodular synovitis.
- ◆ Bone scan:
 - Stress fracture.

- RSD

Synovial Fluid Analysis

Indications

1. Infection
2. Crystal induced arthritides
3. Hemarthrosis (traumatic, pigmented villonodular synovitis).
4. Differentiate inflammatory from non-inflammatory arthritis (WBCs count)