Approach to a patient with mono/oligoarthritis
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INTRODUCTION
When approaching a patient suspected of having arthritis, the first task for the clinician should be to differentiate arthralgias (history of joint pains) from arthritis (clinically demonstrable evidence of synovitis in the form of joint swelling, tenderness, effusion or warmth). Arthralgias, being non-specific, do not carry the same clinical significance as arthritis. The three key questions which need to be addressed to every patient with arthritis are:

1. How many joints are involved?
2. What is the duration of symptoms?
3. Is the joint disease inflammatory or non-inflammatory?

Monoarthritis refers to the involvement of a single joint, while the term oligoarthritis (or pauci-articular disease) refers to arthritis affecting 2-4 joints. When the number of joints involved is more than 4, the term polyarthritis is used. It is important to know the number of joints affected because it narrows down the diagnostic possibilities and helps the clinician in embarking upon investigations in a planned manner. The duration of symptoms is important because viral arthritides are common, self-limiting and need only symptomatic treatment. Only if the symptoms persist beyond 6 weeks, does the patient need investigations. Inflammatory polyarthritides such as rheumatoid arthritis or psoriatic arthropathy need to be distinguished from non-inflammatory polyarthritis because the management is radically different. (The main points have been tabulated in the previous article of this series.)

MONOARTHRITIS
The causes of monoarthritis are listed in Table I. Involvement of a single joint should prompt the clinician to consider crystal arthropathy (gout) or septic arthritis. The rule of thumb is to consider every case of monoarthritis as an infection of the joint, unless proven otherwise. This is because untreated septic arthritis rapidly results in joint destruction. Hence, looking over septic arthritis is a serious error. The key points to be remembered while dealing with monoarthritis are given in the box below.

Key points in dealing with monoarthritis

- Monoarthritis should be considered as an infection unless proven otherwise
- Joint aspiration and synovial fluid analysis are mandatory
- Synovial fluid should be subjected to gross examination, total and differential leucocyte count, Gram and Ziehl–Neelsen staining, culture and crystal study

Cell counts:
- Normal synovial fluid <180 white blood cells per cmm, mostly mononuclear
- Non-inflammatory synovial fluid (e.g. osteoarthritis) <2000 white blood cells per cmm
- Inflammatory synovial fluid (e.g. gout) >2000 white blood cells per cmm
- Septic arthritis >90% polymorphonuclear neutrophils

The only way to definitively diagnose gout is by crystal identification. Serum uric acid levels may be normal.

OLIGOARTHRITIS
The causes of oligoarthritis are listed in Table II. It is important to realize that some conditions such as gout can present as monoarthritis, oligoarthritis or rarely even as polyarthritis. Similarly, juvenile rheumatoid arthritis or psoriasis can have oligoarticular or polyarticular involvement. Definitive diagnosis of gout requires crystal identification. Hyperuricaemia alone is not sufficient to make a diagnosis of gout.

Table II. Causes of oligoarthritis

- Gout
- Juvenile chronic arthritis (JCA)
- Psoriasis
- Seronegative spondyloarthropathies (SSA)
- Lyme disease

Seronegative spondyloarthropathies (SSA) constitute a vast majority of oligoarthritides encountered in clinical practice. These conditions (Table III) share several common features which are given in the box on the next page. Clinically, SSA should be suspected whenever a young patient (<40 years) presents with inflammatory low back pain and asymmetrical, below-the-waist oligoarthritis, that is, asymmetric involvement of knees or ankles. While dealing with low backache, it is clinically helpful to differentiate between mechanical and inflammatory low backache. Inflammatory low backache worsens after rest or prolonged sitting in the same posture, in contrast to mechanical causes of low backache, such as prolapsed intervertebral disc, in which pain improves on rest. Early morning stiffness, if present, supports the diagnosis of inflammatory low backache.
TABLE III. Seronegative spondyloarthropathies (SSA)

- Ankylosing spondylitis
- Reiter’s syndrome
- Reactive arthritis
- Psoriatic spondyloarthropathy
- Inflammatory bowel disease (Enteropathic spondyloarthropathy)
- Juvenile spondyloarthropathy
- Unclassifiable or undifferentiated spondyloarthropathy

Key features of seronegative spondyloarthropathies (SSA)

- Seronegative, i.e. rheumatoid factor is absent
- Affect the axial skeleton; inflammatory low backache is common
- Cardinal feature is involvement of sacroiliac joints
- Peripheral joint involvement is usually asymmetrical, oligoarticular, below waist involvement
- Usually associated with HLA-B27
- Enthesopathy (pain along tendon insertion sites) is characteristic

Upper limb involvement is uncommon in SSA (in contrast to rheumatoid arthritis or systemic lupus erythematosus). Buttock ache is typical. Sacroiliitis is the characteristic radiological hallmark of SSA. However, conditions other than SSA can give rise to sacroiliitis (Table IV). Enthesopathy, pain along the insertion of tendons and ligaments, is another characteristic feature. The vast majority of patients are HLA-B27 positive. However, it must be kept in mind that nearly 5%–6% of the healthy north Indian population is HLA-B27 positive.

TABLE IV. Differential diagnosis of radiological sacroiliitis

**Unilateral**
- Tuberculosis
- Any cause of bilateral sacroiliitis

**Bilateral**
- Ankylosing spondylitis
- Reactive arthritis (including Reiter’s syndrome)
- Inflammatory bowel disease
- Psoriasis
- Juvenile spondyloarthropathy
- Unclassifiable seronegative spondyloarthropathies

Ankylosing spondylitis is the prototype disease of SSA. Reactive arthritis may be post-dysenteric or sexually acquired (within 2–4 weeks). In addition to arthritis, the patient with reactive arthritis may have urethritis or cervicitis and conjunctivitis. The genital lesions may be clinically silent. When toes or fingers are affected in reactive arthritis, the entire digit is usually diffusely swollen, a phenomenon referred to as sausage digits or dactylitis. Dactylitis is clinically a very important point of distinction from joint diseases such as rheumatoid arthritis where only the joint and not the entire digit gets swollen. The other important cause of sausage digits is psoriatic arthropathy. Also, inflammatory bowel disease may at times be clinically silent and picked up only on colonoscopy. The term juvenile spondyloarthropathy is used when the age of onset is below 16 years. The term undifferentiated or unclassifiable SSA is used to denote those patients who have enough characteristics to be classified as SSA but do not fit into any of the definite categories given in Table III. An algorithmic approach to oligoarthritis is set out in Fig. 1.

A careful history and physical examination enable one to reach the diagnosis in a vast majority of patients who present with mono/oligoarticular disease.

**SELECTED READING**