Everyday Practice

Approach to a patient with musculoskeletal complaints

R. HANDA

INTRODUCTION

Musculoskeletal disorders are very common in everyday practice. A general practitioner or family physician, with little or no formal training in rheumatology, is not always confident of dealing with these common clinical problems. This article—the first of a series on Rheumatology—outlines a step-wise approach to a patient with rheumatic complaints.

This series of articles is aimed at the primary care or 'non-rheumatologist' physician. The articles aim to equip the general practitioner to be able to:

1. differentiate joint pains from soft tissue rheumatism in a patient with musculoskeletal complaints.
2. differentiate inflammatory from non-inflammatory causes of joint pains.
3. categorize patients into those with monoarthritis, oligoarthritis and polyarthritis, and adopt a practical approach leading to a specific diagnosis.
4. suspect and categorize connective tissue diseases.
5. make rational and cost-effective use of laboratory investigations.

Step-wise examintion

Diffuse aches and pains are frequent presenting complaints (Table I). The first step should be to characterize the site of pain (Fig. 1 and Table II). The clinician should ascertain if the pain is articular, periarticular (from tendon, bursa, ligament) or extra-articular (bone, muscle, nerve, fascia). The cardinal components of examination of the musculoskeletal system are the history, physical examination and the 'time' of occurrence of pain. Symptoms of many disorders resemble each other and the clinician should refrain from seeking a definite diagnostic label at the very first encounter. If the duration of symptoms is less than six weeks, then benign conditions such as post-viral arthralgias should be considered. In such instances, only limited evaluation and follow up are required. However, patients with symptoms lasting for six weeks or more, and those with constitutional symptoms referable to other organs need detailed evaluation (Table III).

Examination of the musculoskeletal system follows the sequence—look, feel and move. The examiner inspects, palpates and finally takes the joint through its range of motion. Active and passive range of motion is a valuable bedside tool in differentiating joint disease from neuromuscular disease (Table IV). Usually, the active range of movement is less than the passive range.

The next step is to determine the nature of the pathogenetic process—inflammatory or non-inflammatory. Inflammatory diseases are characterized by morning stiffness, constitutional symptoms, swelling, erythema, tenderness and local rise in temperature (Table V). In addition, acute phase reactants are commonly elevated, for example, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), platelets, etc. In clinical practice, ESR is

TABLE I. Common causes of diffuse aches and pains

- Post-viral arthralgias and myalgias
- Soft tissue rheumatism
- Hypo/hyperthyroidism
- Metabolic bone disease (osteomalacia, osteoporosis)
- Myopathy, inflammatory muscle disease (myositis)
- Inflammatory polyarthritis—rheumatoid arthritis, systemic lupus erythematosus, psoriasis
- Chronic fatigue syndrome
- Leukaemia, lymphomas (in children, these may present with bone pains)
- Growing pains

TABLE II. Identifying the site of pain

Arthritis	Joint swelling, warmth, tenderness and restricted range of motion
Bursitis	Point tenderness over the anatomical site
Tendinitis	Linear swelling of tendon sheath, warmth, tenderness over the course of the tendon, and occasionally tendon rub (which may be palpable or audible). Stretching the tendon induces pain
Enthesitis	Pain at the site of insertion of tendon
Fibromyalgia	Diffuse pain with characteristic tender points
Muscle pain	Diffuse, not well localized
Bone pains	Deep-seated tenderness can be elicited by pressing bones
Growing pains	Benign leg pains, typically bilateral, in children 8–12 years old, usually a diagnosis of exclusion

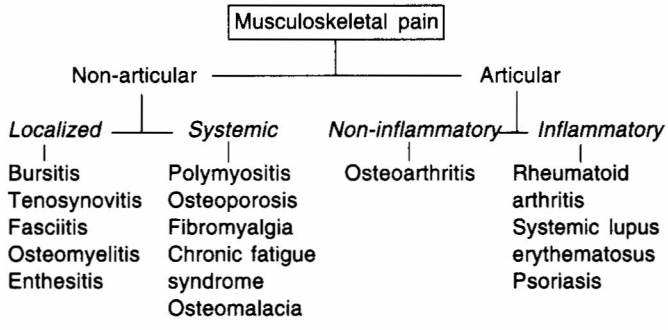

FIG 1. Classification of musculoskeletal pain

TABLE III. Patients who need a detailed work-up

- Symptom duration >6 weeks
- Older patients (Age >60 years)
- Prominent constitutional/systemic symptoms, e.g. fever, weight loss
- Clinical evidence of multiple organ involvement

Department of Medicine, All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110029, India

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TABLE IV. Differential diagnosis based on active and passive range of motion

Diagnosis	Range of motion
Normal	Active range < passive range
Neuromuscular disease	Active range limited; passive range normal
Joint disease	Both active and passive range limited

TABLE V. Inflammatory *v.* non-inflammatory joint disease

Feature	Inflammatory	Non-inflammatory
Prototype disease	Rheumatoid arthritis	Osteoarthritis
Morning stiffness	Marked (>30 minutes)	Mild or absent
Symptoms after		
Rest	Worsen	Improve
Activity	Improve	Worsen
Spontaneous ups and downs	Often	Do not occur
Constitutional symptoms	Present	Absent
Gel phenomenon (stiffness after prolonged immobility)	Frequently present	Less frequent
Response to NSAIDs	Usually good	Usually poor
ESR and other acute phase reactants	Increased	Normal or mild

NSAIDs non-steroidal anti-inflammatory drugs

the most commonly utilized acute phase reactant. However, the ESR, though quite sensitive is non-specific, and also increases with age. Table VI lists the characteristics of acute phase reactants.

Another issue of practical importance is the differentiation between the two important causes of metabolic bone disease, namely osteoporosis and osteomalacia. Osteoporosis refers to a reduction in the total mass of bone which is normally mineralized, while osteomalacia is defective mineralization of the collagen matrix of bone. Table VII gives the differences between these two conditions. Finally, the physician should be aware that diseases such as fibromyalgia, temporal arteritis and polymyalgia rheumatica are uncommon in Indians.

In conclusion, the vast majority of musculoskeletal disorders can be easily diagnosed by a complete history and physical examination. The box below outlines the key points. Therapy is directed accordingly.

TABLE VI. Acute phase reactants

- Increase following inflammation or tissue necrosis
- *Commonly used acute phase reactants* in evaluation of rheumatic diseases: erythrocyte sedimentation rate and C-reactive protein
- *Other acute phase reactants:* Fibrinogen, prothrombin, albumin, haptoglobin, C3, C4, ceruloplasmin, fibronectin, serum amyloid-A protein
- Platelet count may increase as acute phase response especially in rheumatoid arthritis
- Normal erythrocyte sedimentation rate (mm/hour)

Males: $\frac{\text{Age in years}}{2}$ Females: $\frac{\text{Age in years}+10}{2}$

TABLE VII. Differentiating osteoporosis from osteomalacia

Feature	Osteoporosis	Osteomalacia
History		
Diffuse aches and pains	–	+
Muscle weakness	–	+
Localized back pain	+	–
Examination		
Pain by pressing bones	–	+
Loss of height	+	–
Serum chemistry		
Serum calcium	normal	normal or decreased
Serum phosphorus	normal	normal or decreased
Serum alkaline phosphatase	normal	increased
Vitamin D	normal	decreased
Radiology		
Looser's zones	–	+
Vertebral fractures	+	–

SELECTED READING

1 American College of Rheumatology Ad Hoc Committee on Clinical Guidelines: Guidelines for the initial evaluation of the adult patient with acute musculoskeletal symptoms. *Arthritis Rheum* 1996;**39**:1–8.

2 Jones AC, Ledingham J, Regan M, Doherty M. A proposed minimal rheumatological screening history and examination: The joint answers back. *J Roy Coll Phys Lond* 1991;**25**:111–15.

Evaluation of musculoskeletal symptoms: Key points

1. Identify **the anatomical site** of involvement: Joint, tendon, bursa, ligament, bone, muscle, nerve or fascia.
2. Differentiate between **inflammatory** and **non-inflammatory** causes.
3. Several musculoskeletal disorders resemble each other at the outset and categorization into specific entities may not be possible at the first visit.
4. Give **symptomatic treatment** and re-evaluate clinically.
5. Many musculoskeletal conditions are **self-limiting**.
6. If symptoms persist, **order laboratory tests judiciously**. Avoid a battery of tests.