UNIT NO. 6

SYSTEMIC DISEASES PRESENTING WITH JOINT PAIN

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ABSTRACT

Joint pain is often only a local musculoskeletal problem but it may be the first symptom of a systemic disorder. The site, pattern and duration of joint involvement provide clues to the type of systemic illness. Constitutional symptoms of fever, weight loss, fatigue and malaise suggest an underlying systemic problem. A good history and thorough physical examination are important. During clinical examination always ascertain if there is evidence of synovitis; redness, soft tissue swelling due to effusion and or synovial thickening, warmth and tenderness. The GALS (Gait, Arms, Legs, Spine) screening examination enables the family physician to quickly identify clinically significant joint abnormalities. If there is suggestion of a systemic disorder, a full physical examination should be carried out. Investigations only serve as aids in confirming or ruling out suspected diagnoses. Serum uric acid, RA factor and ANA tests should not be routine screening tests. Diffuse aches and pains may be due to an underlying endocrine or metabolic problem. All patients suspected to have an infective cause for their arthritis should be referred on an urgent basis. Patients with inflammatory arthritis for whom an underlying cause is not clear or patients where a diagnosis of the systemic disease is made and there is significant constitutional, joint or systemic complaints, would benefit from a referral to a specialist for an opinion on management.

INTRODUCTION

Joint pain is a common complaint especially in older adults. Although it is often only a local musculoskeletal problem it may be the first symptom of a systemic disorder. It is important for the family physician to identify any underlying systemic illness since its management is key to the successful treatment of the joint complaint.

The causes of joint pain can be broadly classified into trauma, 'degenerative', infection, metabolic, malignancy and autoimmune. Table 1 lists some of the common as well as rare but important systemic diseases that may present with joint pain.

WHEN TO SUSPECT SYSTEMIC DISEASE AND HOW TO ASSESS

A good history and thorough physical examination are important since investigations often only serve as aids in confirming or ruling out suspected diagnoses. In systemic diseases joint pain is inflammatory in nature (Table 2). The site, pattern and duration of joint involvement provide clues to the type of systemic illness (Table 3). The presence of constitutional symptoms of fever, weight loss, fatigue and malaise suggest an underlying systemic problem. Low grade fevers are not uncommon in patients with rheumatoid arthritis, seronegative spondyloarthritis, and many autoimmune connective tissue diseases while gout, Adult Still's disease and infective arthritis are often associated with high fevers. A review of all organ systems should follow any complaint of inflammatory joint pain as well as the impact of the joint complaint on function, social and psychological well-being (Tables 4 & 5).

TABLE 1: Common or Rare But Important Systemic Disorders That May Present with Joint Pain

Gout
Rheumatoid arthritis
Psoriatic arthritis
Seronegative spondyloarthritides: ankylosing spondylitis, Reitier's syndrome
Systemic lupus erythematosus (SLE)
Sjogren's syndrome
Polymyalgia rheumatica
Relapsing polychondritis
Adult Still's disease
Infections: bacterial, viral, gonococcal, TB
Malignant disorders: leukaemia

TABLE 2: History Differentiating Inflammatory from Non-Inflammatory Joint

Inflammatory	Non-inflammatory
Morning stiffness > 1 hour	Morning stiffness usually < half an hour
Stiffness worse with rest, improves with activity	Stiffness related to prior use
Swelling often present	Swelling often absent
Warmth present	Warmth absent
Redness may be present	Redness absent

TABLE 3: Clues from Site, Pattern and Duration of Joint Involvement

Symmetrical involvement of mainly small joints of hands and feet:
rheumatoid arthritis, psoriatric arthritis, systemic lupus erythematosus, polymyositis, Sjogren's syndrome, polyarticular gout, viral infection

Asymmetrical involvement of mainly large joints:
Ankylosing spondylitis, Reiter's syndrome/reactive arthritis, psoriatric arthritis, viral infection, acute lymphoblastic leukaemia

Axial involvement:
Ankylosing spondylitis, Reiter's syndrome, psoriatic spondylitis, inflammatory bowel disease

Acute monoarthritis or oligoarthritis:
Infection (bacterial, gonococcal), gout, palindromic rheumatism, reactive arthritis

Chronic monoarthritis or oligoarthritis:
Rheumatoid arthritis, psoriatric arthritis, TB, neoplastic involvement, reactive arthritis

Acute polyarthritis:
Viral arthritis, polyarticular gout

Chronic Polyarthritis:
Rheumatoid arthritis, psoriatric arthritis, systemic lupus erythematosus, Sjogren's syndrome

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TABLE 4: History Taking in a Patient Presenting with Joint Pain

Character of joint pain: inflammatory or non-inflammatory
Onset: how long ago, acute or insidious
Site: axial or peripheral
Pattern: mono, oligo or polyarticular, small or large joints, symmetrical or asymmetrical
Inciting, aggravating and alleviating factors
Episodic, or persistent, is it progressive
Duration of each episode if episodic
Constitutional symptoms
Systemic complaints
Severity and functional disabilities
Social and psychological consequences
Therapy received in the past and current: include alternative medicines.

TABLE 5: Symptoms to Ask in a Patient with Inflammatory Joint Pain

Constitutional symptom: fever, weight loss, fatigue, malaise
Skin rashes, photosensitivity
Oral/genital ulcers
Hair/scalp or nail problem
Xerostomia
Ocular complaints: dry eyes, redness, blurring of vision
Raynaud's phenomenon
Myalgia, weakness
Pleuritic chest pain, chronic cough, dyspnoea
Chronic diarrhoea

During clinical examination always ascertain if there is evidence of synovitis; redness, soft tissue swelling due to effusion and or synovial thickening, warmth and tenderness. The GALS (Gait, Arms, Legs, Spine) screening examination enables the family physician to quickly identify clinically significant joint abnormalities during a typical busy GP consultation. If there is suggestion of a systemic disorder, a full physical examination should be carried out.

Always think carefully before ordering investigations as inappropriate testing causes more problems than it solves. Before ordering any serological test, consider first the pre-test probability of the disease and interpret the results with reference to the clinical presentation. Table 6 lists the tests that are frequently ordered as initial screening examination in a patient suspected of having an underlying systemic disease. Serum uric acid, RA factor and ANA tests should not be routine screening tests but should be ordered only when indicated. Remember presence of a high serum uric acid does not equal gout and a normal uric acid is found in 20% of patients with acute gout. A diagnosis of gout is made by demonstrating the presence of monosodium urate crystals in synovial fluid from the inflamed joint when the history is consistent. There are many reasons for a positive RA factor and ANA test as these tests lack specificity. An elevated ESR or CRP is a useful indicated of a systemic problem. Patients with diffuse aches and pains may have an underlying endocrine or metabolic problem (Table 7).

TABLE 6: Commonly Ordered Investigations in Patients with Inflammatory Joint Pain

Full blood count and platelet count
ESR and/or C- reactive protein
Serum creatinine
Serum uric acid
RA factor, ANA
Urine FEME and dipstick for protein
Synovial fluid FEME, gram stain, crystals and culture
Joint X-ray
Chest X-ray

TABLE 7: Laboratory Tests for Complaints of Diffuse Aches and Pains

Complete blood count and platelet count
ESR
Blood urea and electrolytes
Thyroid function test
Creatine phosphokinase, aldolase
Serum calcium, phosphate

KEY FEATURES, DIAGNOSTICS AND MANAGEMENT POINTERS OF COMMON AND/OR IMPORTANT CONDITIONS

Two common systemic diseases presenting as joint pains are gout and rheumatoid arthritis (Tables 8 & 9).

TABLE 8: GOUT – Key Points

Who gets gout?
Young to middle-aged men and postmenopausal women
What is a typical attack?
Monoarticular
Sudden onset, usually nocturnal
Joint rapidly becomes painful, erythematous, warm, and exquisitely tender
Associated with systemic features like fever, malaise
Leucocytosis, thrombocytosis, elevated ESR
Attack self-limited – 3 to 10 days
Approach to acute gout
Establish correct diagnosis
Rule out secondary gout
Check renal function, blood glucose, fasting lipids, urine FEME, LFT (if history of alcohol ingestion)
Initiate treatment as soon as possible: choice of NSAID/COX 2 inhibitor, colchicine, intra-articular or a short course of oral corticosteroid
If the patient is already on a urate lowering drug, do not stop the drug
Management of intercritical gout
Non-pharmacologic measures: dietary advice, weight reduction, hydration, avoiding medications that cause hyperuricaemia – low dose aspirin, thiazides, ethambutol, pyrazinamide
Urate lowering drugs: for tophaceous gout, aim for serum urate < 5mg/dl
If there is no renal impairment, and urinary excretion of uric acid is not elevated, a uricosuric agent such a probenecid is preferred to allopurinol

TABLE 9: RHEUMATOID ARTHRITIS – Key Points

Who gets RA?
- Females>males, age of onset: 30-40 years old

Typical presentation
- Symmetrical inflammatory arthritis affecting wrists, MCP, MTP and PIP joints of both hands
- Insidious onset
- Associated low grade fever, malaise, fatigue, weight loss
- Mild anaemia, thrombocytosis, elevated ESR and CRP
- Xrays of affected joints may show soft tissue swelling, osteopenia and erosions if disease has been present for sometime and is aggressive

Principles of management
- Aims: prevent joint damage through early control of inflammation, maintain joint function and relieve pain
- Education and counselling
- Rest and splints: in very active disease that is beneficial
- Exercise programme: maintain range of motion, improve muscle strength
- Pain relief using physical therapy
- Joint protection techniques and aids in activities of daily living
- NSAIDs to control pain and inflammation. Use COX 2 inhibitors only if NSAIDs are contraindicated due to gastrointestinal problems
- Low dose prednisolone (<7.5 mg per day) if NSAID and COX 2 inhibitors are contraindicated or fail to control the inflammation quickly and patient is functionally significantly affected.
- Start DMARD early, three commonly used DMARDS are methotrexate, Hydroxychloroquine and sulphasalazine.

WHEN TO REFER

All patients suspected to have an infective cause for their arthritis should be referred on an urgent basis as delay in diagnosis and treatment may affect outcome. Consider referring patients with gout when arthritis is recurrent despite diet control and use of urate-lowering agents, in tophaceous and/or polyarticular gout, when there is associated renal impairment and when there is allopurinol allergy. Patients with inflammatory arthritis for whom an underlying cause is not clear should be referred to a rheumatologist for assessment. Cases where a diagnosis of the systemic disease is made and there is significant constitutional, joint or systemic complaints would also benefit from a referral to a specialist for an opinion on management.

SUGGESTED READING

Bulletin on the Rheumatic Diseases (Arthritis Foundation of America). Website: www.arthritis.org.

LEARNING POINTS

- A local musculoskeletal problem may be the first symptom of a systemic disorder. Constitutional symptoms of fever, weight loss, fatigue and malaise suggest an underlying systemic problem. A good history is important
- During clinical examination always ascertain if there is evidence of synovitis; redness, soft tissue swelling due to effusion and or synovial thickening, warmth and tenderness
- The GALS (Gait, Arms, Legs, Spine) screening examination enables the family physician to quickly identify clinically significant joint abnormalities. If there is suggestion of a systemic disorder, a full physical examination should be carried out
- Investigations only serve as aids in confirming or ruling out suspected diagnoses. Before ordering any serological test, consider first the pre-test probability of the disease and interpret the results with reference to the clinical presentation. Serum uric acid, RA factor and ANA tests should not be routine screening tests but should be ordered only when indicated
- Patients with diffuse aches and pains may have an underlying endocrine or metabolic problem
- Two common systemic diseases presenting as joint pains are gout and rheumatoid arthritis
- All patients suspected to have an infective cause for their arthritis should be referred on an urgent basis
- Patients with inflammatory arthritis for whom an underlying cause is not clear or where a diagnosis of the systemic disease is made and there is significant constitutional, joint or systemic complaints would benefit from a referral to a specialist for an opinion on management.