MUSCULOSKELETAL

ATRAUMATIC JOINT SWELLING

Painful, swollen joints are a common complaint. Diagnostically, the first priority is to determine if the problem is traumatic or atraumatic.

Next determine whether the problem is articular (within the joint capsule) or periarticular (external to the joint capsule). Tendons, bursae & ligaments are periarticular.

Articular problems generally cause warmth, tenderness or swelling around the entire joint with painful movement in all directions.

Periarticular problems cause localised pain and painful movement in only in some directions.

In an atraumatic painful, swollen joint, the differential depends on which joints are involved.

Monoarthritis	Oligoarthritis	Symmetrical Polyarthritis	Asymmetrical polyarthritis
Septic arthritis	Gout	Rheumatoid arthritis	Reactive arthritis
Gout	Pseudogout	Osteoarthritis	Psoriatic arthritis
Pseudogout	Reactive arthritis	Viral (hepatitis, mumps)	
Osteoarthritis	Ankylosing spondylitis	Connective tissue diseases	
	Osteoarthritis		

Osteoarthritis: the history is chronic and there is pain on movement, stiffness after rest and joint instability. Examination may reveal crepitus and bony swelling (eg DIP and PIP joints). Heat, erythema, redness and constitutional symptoms will be absent. ED presentation may follow a new injury so consider the possibility of a new fracture. NSAIDs, paracetamol, graduated exercise and GP follow up are all that is usually required.

Septic Arthritis: a joint infection which, if left untreated, leads to rapid joint destruction and sepsis. Infection arises from haematogenous spread, adjacent osteomyelitis or a wound involving the joint (including procedures such as joint aspiration or steroid injection).

Clinical Features

- Acute history.
- Red, hot, tender, swollen joint.
- ROM markedly reduced.
- Fevers, rigors & constitutional Sx.
- Source of infection (eg. pneumonia)

Risk Factors for Septic Arthritis

- Pre-existing joint disease
- Diabetes & immunocompromise
- CKD
- Prosthetic joint
- Intravenous drug use

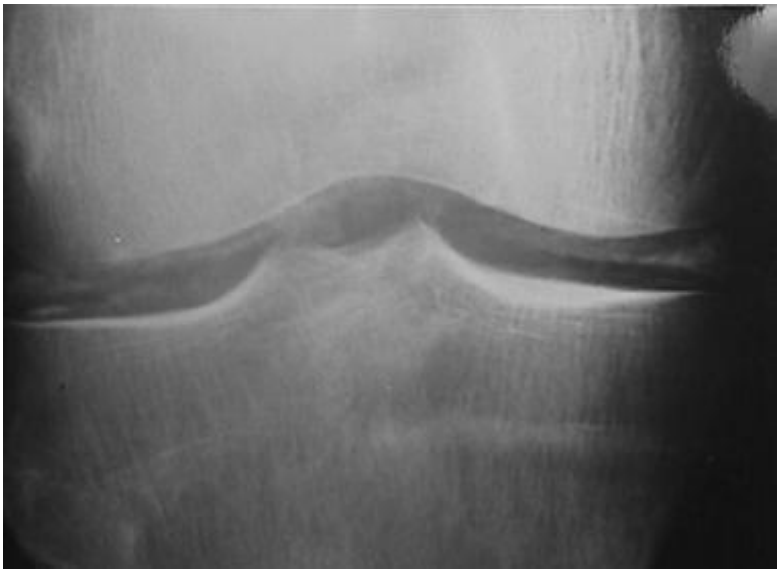
Crystal Arthritis: joint inflammation caused by precipitation of crystals in the joint. Gout is caused by sodium urate; pseudogout is caused by calcium pyrophosphate.

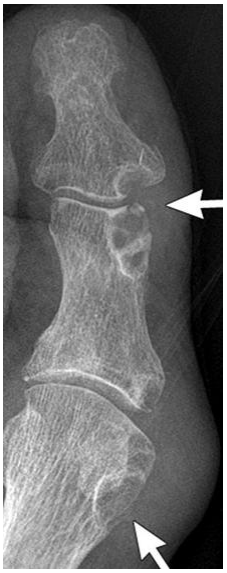
Clinical Features

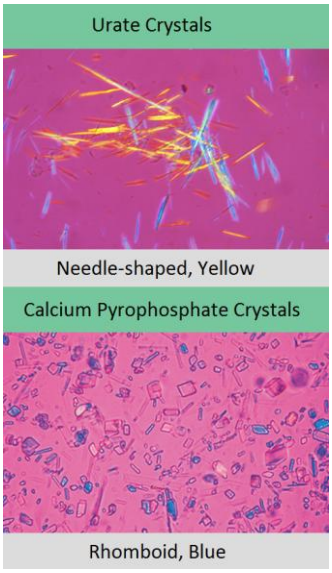
- Acute history but there may have been previous episodes.
- Red, hot, tender, swollen joint.
- Constitutional symptoms & fever may be present but are less common than in SA.
- Gout: precipitated by trauma, diuretics, renal failure and alcohol.
- Gout: tophi (extra-articular depositions of urate) may be visible over joints/tendons.
- Gout: most commonly affects the first MTP (50% all attacks, 70% of first attacks).
- Pseudogout: precipitated by dehydration, intercurrent illness, hyperparathyroidism.
- Pseudogout: usually affects large joints.

Management

- **Bloods and blood cultures**. Urate may be normal in attacks of acute gout.
- **X-ray:** chondrocalcinosis (pseudogout – below left), joint destruction (septic arthritis), periarticular erosions (gout – below middle).
- **Joint aspiration:** for microscopy and culture. Gout: negatively birefringent crystals. Pseudogout: positively birefringent crystals. Joint aspiration is the most important diagnostic test but is performed by inpatient teams rather than ED.







Disposition: if you can confidently diagnose gout consider discharge with NAIDS, colchicine or prednisolone. This is appropriate for patients presenting with first MTP joint inflammation, who are systemically well and who have no risk factors for septic arthritis. Most others are likely to require admission for exclusion of septic arthritis.

Treat with IV antibiotics (flucloxacillin and gentamicin) and refer to the medical team. If the affected joint is prosthetic, refer to the orthopaedic team.