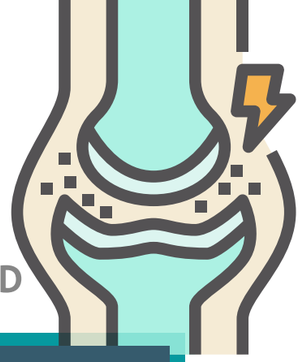
The ABCs of

Septic Arthritis

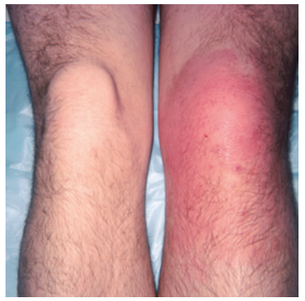
UNDERSTANDING THE FACTS BEHIND



- Invasion of a joint by an infectious agent causing inflammation.
- Requires a high index of suspicion as it is a medical emergency with rapid onset
  - Can cause irreversible cartilage destruction within 8hrs
  - If left untreated can progress from localised infection → septicaemia → sepsis, which can be fatal (10-20% mortality rate)
- Most commonly affects the knee (approximately 50% of cases),but can affect any joint

2. Symptoms

- Single swollen joint with severe pain
  - Redness
  - Warmth
  - Immobility of the joint
- Fever (60% of cases)
- Effusion



3. Risk factors

- Age >80 years old
- Pre-existing joint disease (eg. Rheumatoid arthritis)
- T2DM or immunosuppression (eg. HIV)
- Skin infection/cutaneous ulcers
- Chronic renal failure
- Joint prosthesis
- IV drug use
- Recent bacteremia

4. Aetiology

- Bacteremia (when bacteria enters the bloodstream). Can be due to:
- Recent cellulitis
- UTI
- URTI
- IV drug use
- Direct inoculation, due to:
- Penetrating trauma
- Surgery
- Intra-articular injection
- Spread from adjacent osteomyelitis

5. Causative Organisms

Staphylococcus aureus
- Most common in adults, >50% of cases
- Common in IV drug use

Neisseria gonorrhoea
- Common amongst young sexually active adults and adolescents
  - ~20% of cases

Group B streptococcus (eg. Strep agalactiae)
- Seen in infants, elderly and diabetics

Salmonella
- Seen commonly in patients with Sickle cell disease but makes up a very small percentage of cases

6. Differential diagnosis

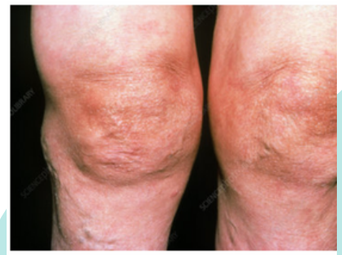
- Osteoarthritis
- Haemarthrosis
- Crystal arthropathy (gout/pseudogout)
- Rheumatoid arthritis
- Reactive arthritis
- Cellulitis
- Bursitis

7. Investigations

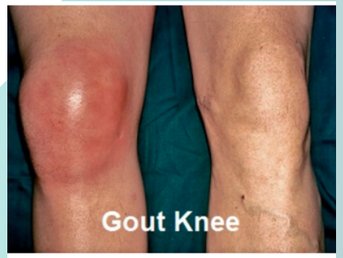
- FBC
  - WBC count > 50,000 per mm3 and a neutrophil count > 90 percent indicate septic arthritis
    - WBC count can also be used to monitor progress during treatment
- ESR, CRP
- Blood culture
  - 2 separate samples required, especially in patients with evidence of sepsis
- Joint fluid aspiration
  - Gram stain
  - Culture
- X-ray of the joint (in early stages no changes may be visible)
- Ultrasound
  - Useful to guide aspiration
  - May confirm effusion in large joints eg. hip
- CT/MRI
  - may detect adjacent bone involvement such as osteomyelitis

8. Management

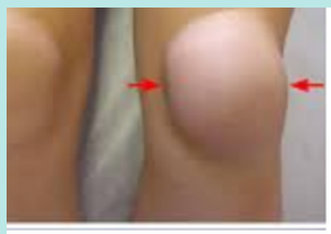
- Empirical antibiotic treatment should be started as soon as possible, after any planned cultures and aspirates have been performed.. Can be decided based on the gram stain.
  - Vancomycin can be used for gram-positive cocci,
  - Ceftriaxone for gram-negative cocci,
  - Ceftazidime for gram-negative rods.
- Antibiotic for this condition should be administered for a duration of 4-6 weeks and initially given intravenously for 2 weeks
  - Adjustments to antibiotic type and duration can later be made following microbiology results and patient response to medication
  - Recurrent
- Irrigation and debridement (washout)
  - May be performed open or arthroscopically depending on the joint
  - If involves a prosthetic joint revision surgery may be required following debridement
- Aspiration of septic joint fluid



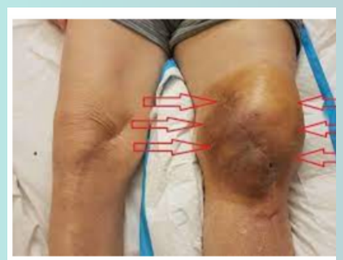
Rheumatoid arthritis- bilateral



Gout



Bursitis



Haemarthrosis

SIGMUM