Osteomyelitis

OSTEOMYELITIS

Infection of the bone which predominantly occurs in

- Children
- Elderly
- Immunocompromised

OSTEOMYELITIS

Two types:

- Acute- occurs before bone death
- Chronic- occurs within and around the death bone.

Acute osteomyelitis almost invariably occurs in children. When occurs in adults, its due to;

- Immunocompromised
- IV drug abuse
- Infectious root-canaled teeth
- Immunosuppressive therapy

OSTEOMYELITIS

Classified according to the cause

- Hematogenous
- Post-traumatic
- Contiguous (from adjacent tissues)

- In children, it commonly arises due to hematogenous spread to the vascular metaphysis

OSTEOMYELITIS

Common sites

- Children- metaphysic of the long bones
- Elderly- Vertebral column, pelvis

Commonest organisms

- Staphylococcus aureus(90% of cases)
- Salmonella in sickle cell disease
- Haemophilus influenzae

EPIDEMIOLOGY

- In high-income countries, it occurs in around 8 per 100 000 children per year, but it is considerably more common in low-income countries, with boys affected twice as often as girls.

PREDISPOSING FACTORS

- Malnutrition
- Debilitating disease
- Decreased immunity
- IV drug abuse
- Infectious root-canaled teeth
- Immunosuppressive therapy

play a role in the pathogenesis

CLINICAL FEATURES

- Short history (within 48 hrs)
- Bone pain and tenderness
- Features of inflammation
- Softening of soft tissues
- Local and systemic signs of infection
- (due to subperiosteal spread)

INVESTIGATIONS

- X-Ray- not useful until 10-14 days, radiographs are a baseline for future change and to exclude differential diagnoses. (Ewing's sarcoma, leukaemia)
- USS- gives an early diagnosis
- Aspiration can be done (Abscess generally deep seated)

INVESTIGATIONS

- Hematological- FBC, ESR, CRP
- Bone scan- early detection of diseases
- Blood cultures are often positive with staphylococcal infection.

INVESTIGATIONS

- MRI- showing marrow oedema in 3days and useful for deeper bones (Pelvis)
- Bone biopsy and culture identifies the organism and sensitivities.

MANAGEMENT

- Treatment of osteomyelitis centres on immobilization and antibiotic therapy with intravenous teicoplanin or intravenous flucloxacillin 1–2 g every 6 hours and oral sodium fusidate.
- Switch to oral antibiotics after 2 weeks and continue for a further 4 weeks.

MANAGEMENT

- Treatment continues until the
- patient is apyrexial and the inflammatory markers normal.
- Surgical drainage and removal of dead bone (sequestrum) may be necessary but recurrence is common.

MANAGEMENT

- Chronic osteomyelitis is treated using similar principles when a flare-up occurs but cure can only be achieved by surgical excision of the infected bone.

COMPLICATIONS

- Delayed treatment leads to chronic osteomyelitis.
- In chronic osteomyelitis, sinus formation is usual.
- Subacute osteomyelitis is associated with a chronic abscess within the bone (Brodie's abscess)

COMPLICATIONS

- In immunocompromised patients opportunistic infections can arise and, in diabetics, failure to treat with debridement can lead to amputation.

Tuberculous osteomyelitis

- This is usually due to hematogenous spread from a reactivated primary focus in the lungs or gastrointestinal tract.
- The disease starts in intra-articular bone.

Tuberculous osteomyelitis

- The spine is commonly involved (Pott's disease), with damage to the bodies of two neighboring vertebrae leading to vertebral collapse and acute angulation of the spine (gibbus).
- Later, an abscess forms (‘cold abscess’).

Tuberculous osteomyelitis

- Pus can track along tissue planes and discharge at a point far from the affected vertebrae.
- Symptoms consist of local pain and later swelling if pus has collected.
- Systemic symptoms of malaise, fever and night sweats occur

Tuberculous osteomyelitis

- **Management** is as for pulmonary tuberculosis but extended to 9 months together with initial immobilization.