Vertebral Osteomyelitis and Disciitis – Spine course 2010

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Vertebral Osteomyelitis and Disciitis

- Demographics
- Etiology and Pathogenesis
- Diagnosis
- Investigations
- Management
  - Medical
  - Surgical
  - Outcome

Demographics

- 8% of all instances of Pyogenic osteomyelitis
- Median age is 50-60
- Usually in patients with risk factors
- Latency to diagnosis is very common

Red flag Features

- **Age < 20 and > 60 years**
- **History of cancer**
- **Immunosuppression**
- **Prolonged use of steroids**
- **Recent infection elsewhere**
- **Pain increased or unrelieved by rest**
- **Night pain**
- **Non-mechanical thoracic pain**
- **Bladder or bowel incontinence**
- **Urinary retention with overflow incontinence**

Pathogenesis

- Haematogenous seeding is the commonest route of entry
- End plate has low flow anastomosis- ideal for seeding of infections
- Disc relatively avascular therefore organism thrives
- Batsons venous plexus unlikely to be source of seeding

Clinical features

- Often takes upto 3 months before diagnosis is made
- 'mechanical back pain', degenerative back pain, UTI frequently thought to be cause
- Pain more severe and unremitting
- Present at rest and often night pain
- Sweats, feeling unwell, fever in a third

Predisposing factors

- Diabetes
- Rheumatoid arthritis
- Immunosuppressive medication
- Sickle cell anaemia
- Post operative
- HIV

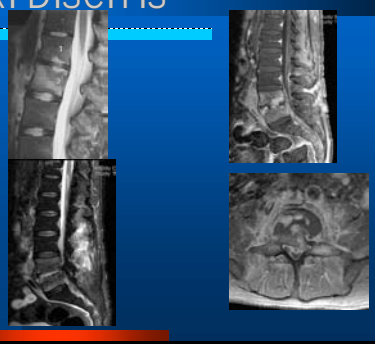
Diagnosis

- High index of suspicion
- Clinical features of insiduous onset new back pain which is intrusive at rest coupled with systemic symptoms, tenderness in the back
- Temperature and night sweats must be asked for

Diagnosis

- Blood tests
  - White cell count
  - ESR
  - CRP-correlate best with response to treatment
- Plain Xrays- suggestive quite late
- MRI scans are sensitive and specific
- Bone scans esp. Indium labelled scans are not very good

MRI DISCITIS



Microbiology

- Antibiotics witheld till several blood cultures are obtained
- Best results during a febrile spike
- CT guided biopsy positive in 50 to 75% patients
- Staph aureus is the commonest culprit
- Pseudomonas and gram neg in IVDU

Microbiology

- TB seen more commonly in indigenous population also
- Salmonella in sickle cell patients
- Fungal infections in HIV/immunocompromised patients
- Culture must include anaerobes and odd organisms

Management-Medical

- Nonsurgical management is successful in 80%
- Antibiotics and bracing
- Monitor with CRP
- MRI changes persist long after infection has settled and are a poor guide about response to treatment

Antibiotics

- Quinoprustin-dalfopristin
- Linezolid
- Daptomycin
  - All effective against MRSA
  - Linezolid orally effective
- 6 weeks to 3 months of antibiotics are essential

Surgery

- Neurological deficit
- Progressive deformity
- Instability
- Failure to respond to medical management

Use of implants

- ? Allows organism to persist in the area
- Titanium is better than Stainless steel implants
- Stability is the key to success
- Bone grafts also used by some

Post operative infections

- Posterior instrumentation at higher risk of infections than anterior
- Instrumented fusions for degenerative spinal stenosis in patient older than 65 can be as high as 10-15%
- CRP is a good guide to infection occurring post op
- Normally returns to baseline in a week

Tuberculosis

- Seen in immunocompromised individuals
- A third may have extraskeletal infections
- More insiduous than pyogenic
- Weight loss and malaise common
- Multiple contiguous vertebrae involved with cold abscesses

Tuberculosis

- Abscesses common frequently large
- Multilevel involvement
- Disc space affected on x ray but disc often not involved
- Neurology common
- Yield of culture takes long
- Histology is more easily available
- Start treatment empirically
- Often long drawn chemotherapy- upto a year
- Surgery with implants not usually a problem

Summary

- Infections are rare but serious cause of back pain
- Affect immunocompromised and older individuals
- Identification of organism very good predictor of successful outcome
- Medical management often successful

Thank you