SEPTIC ARTHRITIS

Prof. M.V. Ngcelwane
Head of Department: Orthopaedics
University of Pretoria
OBJECTIVES

• Diagnose septic arthritis
  - History
  - Clinical exam
  - Investigations

• How it will be treated.
DISEASE
- Septic arthritis

RATING
- C3
  Diagnose+refer

SKILLS TEST
- S3
  Clinical exam of infected joints for relevant signs
- Anatomy
- Bacteriology
- Pathology
- Clinical presentation
- Investigation
- Treatment
- Complications
ACUTE SUPPURATIVE ARTHRITIS

• Common in children
ANATOMY OF A SYNOVIAL JOINT

- Capsule
- Abular (Glenoid) labrum
- Cular zone
- Hyseal plates
- Acetabular fossa
- Ilium
- Synovial pad of fat
- Lig. of head of femur (Lig. teres femoris)
- Acetabular labrum & transverse lig.

4-44 HIp JOnt On Coronal Section
ANATOMY OF A SYNOVIAL JOINT
MODE OF INFECTION

• Blood spread from a distant site
• Local spread from osteitis
• Direct implantation from a wound
BACTERIOLOGY

• Causative organism  - Staph. aureus
  - haemolytic strep
  - neisseria

• Diagnosis  - isolation and culture
  - puss in the joint
  - wall of synovial membrane
  - blood
PREDEPOSING FACTORS

• Immunocompromised – diabetes
  - HIV/Aids
  - steroids

• Children
JOINTS COMMONLY INVOLVED

- Hip
- Knee
- Shoulder
Pathology

Acute synovitis - Varies in severity depending on virulence of the organism and host defences

Synovium gets congested and oedematous

Infiltration by polymorphonuclear leucocytes (pus)
- Serum exudes into the joint (distension, and pain)
- Areas of vascular thrombosis - (note neonatal hip, TomSmith arthritis)

Capsule gets lax, leading to dislocation (child's septic dislocation)
PATHOLOGY (CONTD)

- Healing in mild diseases is by resolution. Exudate gets resorbed
- Proteolytic enzymes from polymorphs- destruction of cartilage and bone erosion
- Repair by granulation tissue - fibrous ankylosis
- Capsule contracts, stiff, inelastic - joint contracture
- Childs hip
CLINICAL PRESENTATION

- Child is ill
- high fever, pyrexial
- rapid pulse
- Severe thrombing pain
  worse on moving or weight bearing
EXAMINATION

(Signs are difficult to see in deep-seated joints)

- **LOOK**
  - skin is red
  - joint is swollen
  - joint is held in attitude of flexion

- **FEEL**
  - warm
  - effusion

- **MOVE**
  - all movements are restricted by pain
10.19. Effusion (2): With greater effusion into the knee the suprapatellar pouch becomes distended. Effusion indicates synovial irritation from trauma or inflammation.

10.20. Effusion (3): Patellar tap test (ballottment test) (1): Squeeze any excess synovial fluid out of the suprapatellar pouch with the index and thumb, pull firmly down to the level of the upper border of the patella. This will also "float" the patella away from the femoral condyles.

10.21. Effusion (4): Patellar tap test (2): Place the tips of the thumb and index fingers of the free hand squarely on the patella, and jerk it quickly downwards towards the tibia. A click as the patella enters the capsule indicates the presence of effusion. Note that if the patella is not properly immobilized as described it will tilt, giving a false negative. Note too that if the effusion is slight or none the tap test will be negative.
INVESTIGATIONS

- FBC
- ESR
- CRP
- Blood culture
- XR
Kocher’s criteria for diagnosis

• Pseudoparalysis
• ESR > 40
• Temp > 38.5 degrees
• WBC > 12
Differential diagnosis

• Trauma – fracture, haemathrosis, traumatic synovitis, STI

• Tumours - priarticular neoplasms, acute leukaemia

• Infection – cellulitis, osteomyelitis, TB

• Inflammation – transient synovitis, RA, gout

• Other – Perthe’s, haemophylia
TREATMENT

- Resuscitate patient
- Pain control
- Incision and Drainage - culture
- Antibiotics - cloxacillin
- THE SUN MUST NEVER SET ON PUS
COMPLICATIONS

• Acute - Break through the skin
  - Joint dislocation
  - Systemic spread - pneumonia
    - Septicaemia
    - death

• Late - Joint contractures
  - Bone destruction
  - ankylosis