

SEPTIC ARTHRITIS

Septic arthritis is an **acute infection of a joint** causing **rapid destruction of articular cartilage** due to pus within the joint.

Most commonly caused by **Staphylococcus aureus**.

Common Joints Involved

- Knee (most common)
- Hip (children)
- Shoulder, ankle, elbow

Route of Infection

- Hematogenous spread (most common)
- Direct inoculation (injury, surgery)
- Spread from nearby osteomyelitis



CLINICAL FEATURES

Feature	Finding
Pain	Severe, sudden onset
Fever	Present
Swelling	Marked joint swelling
Movement	Painful, restricted
Child with hip SA	Refuses to walk / cries on movement

INVESTIGATIONS

Laboratory Tests

- WBC ↑
- ESR ↑
- CRP ↑ (most sensitive)
- Blood culture

Imaging

- X-ray: normal early; later joint space widening (effusion)
- Ultrasound: detects joint effusion (especially hip)
- MRI: early detection of joint infection and adjacent osteomyelitis

DIAGNOSTIC (Most Important)

- **Joint aspiration**
 - Pus
 - Gram stain
 - Culture & sensitivity
 - Cell count

MANAGEMENT (Emergency)

Septic arthritis is an **orthopedic emergency**. Cartilage destruction can begin within **24–48 hours**, so treatment must be immediate and aggressive

1) Immediate Steps (Do not delay)

1. **Joint aspiration** → send for Gram stain, culture, cell count
2. Start **empirical IV antibiotics**(should target **Staphylococcus aureus**) after aspiration
3. Immobilize the joint in position of comfort

2) Antibiotic Therapy :Antibiotics alone are **not enough** if pus is present.

3) Joint Drainage (Very Important)

Pus inside joint destroys cartilage due to enzymes and pressure. It must be removed.

Arthroscopic washout or open arthrotomy is preferred.

4) Immobilization and Later Mobilization

- Splint during acute pain phase
- Start gentle ROM once pain subsides to prevent stiffness

5) Monitoring Response

- Sudden decrease in CRP
- Gradual decrease of ESR

COMPLICATIONS

- Rapid cartilage destruction (within days)
- Joint stiffness
- Dislocation (hip)
- Osteomyelitis
- Sepsis

Kocher's criteria are used to differentiate **septic arthritis of the hip** from transient synovitis in children.

Criteria	Finding
Fever	Temperature > 38.5°C
Non-weight bearing	Child refuses to bear weight
ESR	> 40 mm/hr
Total WBC count	> 12,000 cells/mm ³

SYNOVIAL FLUID ANALYSIS

Parameter	Normal Joint	Inflammatory Arthritis (e.g., RA, gout)	Septic Arthritis (Infection)
Appearance	Clear, transparent	Cloudy	Turbid, purulent (pus)
Viscosity	High (stringy)	Reduced	Very low
WBC count (/mm³)	< 200	2,000 – 50,000	> 50,000 (often >100,000)
Predominant cells	Mononuclear	Neutrophils	Neutrophils >90%
Glucose level	Normal	Slightly low	Very low
Protein	Low	High	High
Gram stain	Negative	Negative	Often positive
Culture	Sterile	Sterile	Positive