

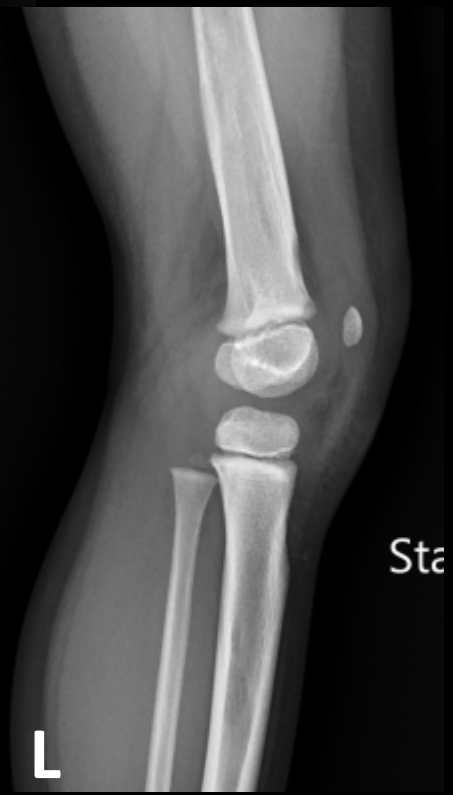
Case 2

Patient Profile

- 4 years old girl
- Chief complaint
 - Left knee painful swelling for 4 days
- Past history
 - nil

Image

- 2018-05-29 Bilateral knees x-ray



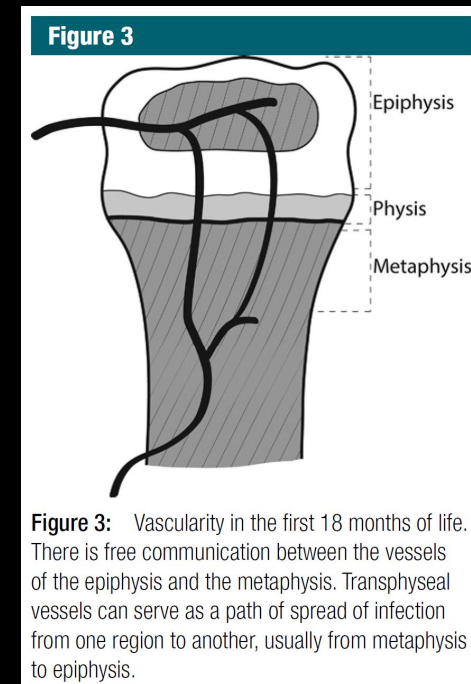
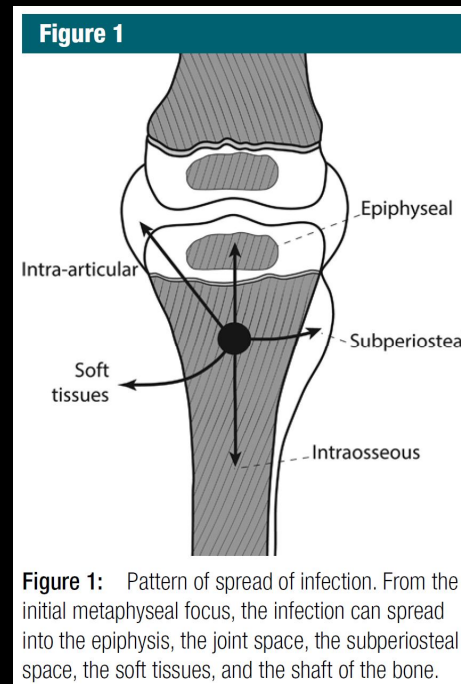
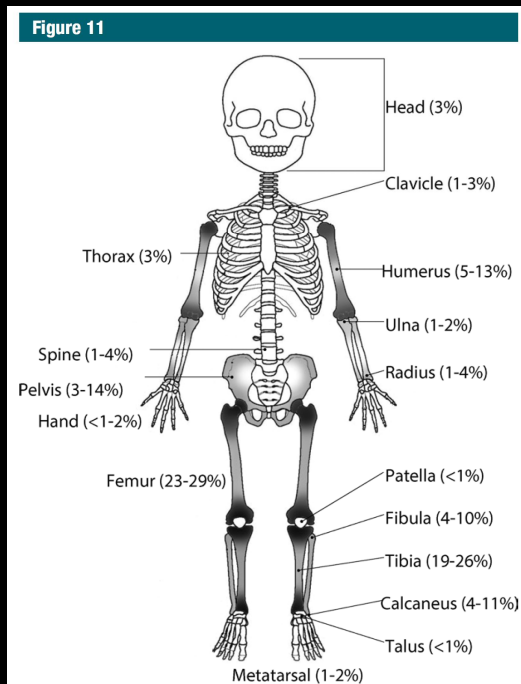


Clinical Course and Information

- Additional information
 - High fever for 1 week
 - WBC: 14620
 - ESR: 86/92 (Normal: 0-20)
- Joint aspiration
 - Turbid fluid with high level of white cell count
 - Synovial fluid culture: Salmonella
- Operation
 - Arthroscopic shaving, and bone window of femur and tibia debridement and irrigation
- Diagnosis
 - Acute septic knee with femoral and tibial osteomyelitis

Osteomyelitis

- Long bone metaphyses 70% (femur > tibia > humerus), short bones 6%, pelvis 5%, spine 2%
 - Metaphysis or equivalent > epiphysis, diaphysis
 - Multifocal in 10% overall but 22% in neonates



Radiology. 2017 Jun;283(3):629-643. doi: 10.1148/radiol.2017151929.

Osteomyelitis

- Acute

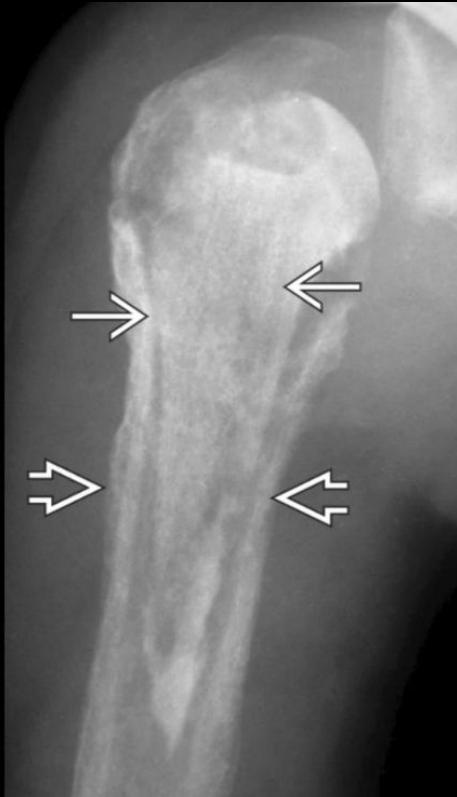
- Plain film: **Focal osteopenia, periostitis**, ill-defined or permeative **bone destruction**
- MR: **Edematous** changes in marrow and soft tissues \pm intraosseous, subperiosteal, soft tissue, epidural abscesses



Permeative destruction of
cortical and medullary bone
Immature periosteal new
bone formation

Osteomyelitis

- Chronic
 - Brodie abscess
 - Radiographs: Lytic lesion with **geographic nonsclerotic margins**, metaphyseal location
 - MR: Well-defined **intraosseous abscess** with **peripheral enhancement**, typically metaphyseal
 - Chronic active osteomyelitis
 - Radiographs: Thickened, irregular sclerotic bone
 - Periosteal bone formation, soft tissue swelling ± sequestrum
 - MR: Marrow and soft tissue **edema, abscess, sinus tracts**



Sequestrum of dead bone surrounded by an involucrum



Diffuse enhancement throughout the medullary canal, soft tissue inflammatory changes, with a small abscess
Intraosseous abscess

