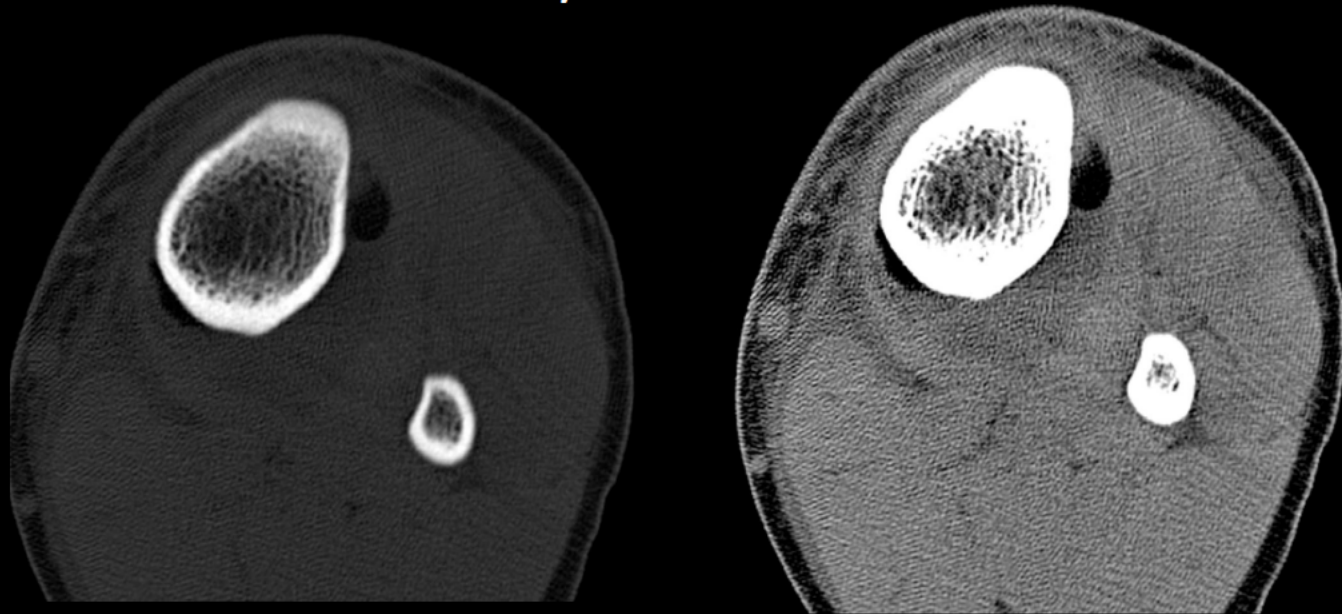
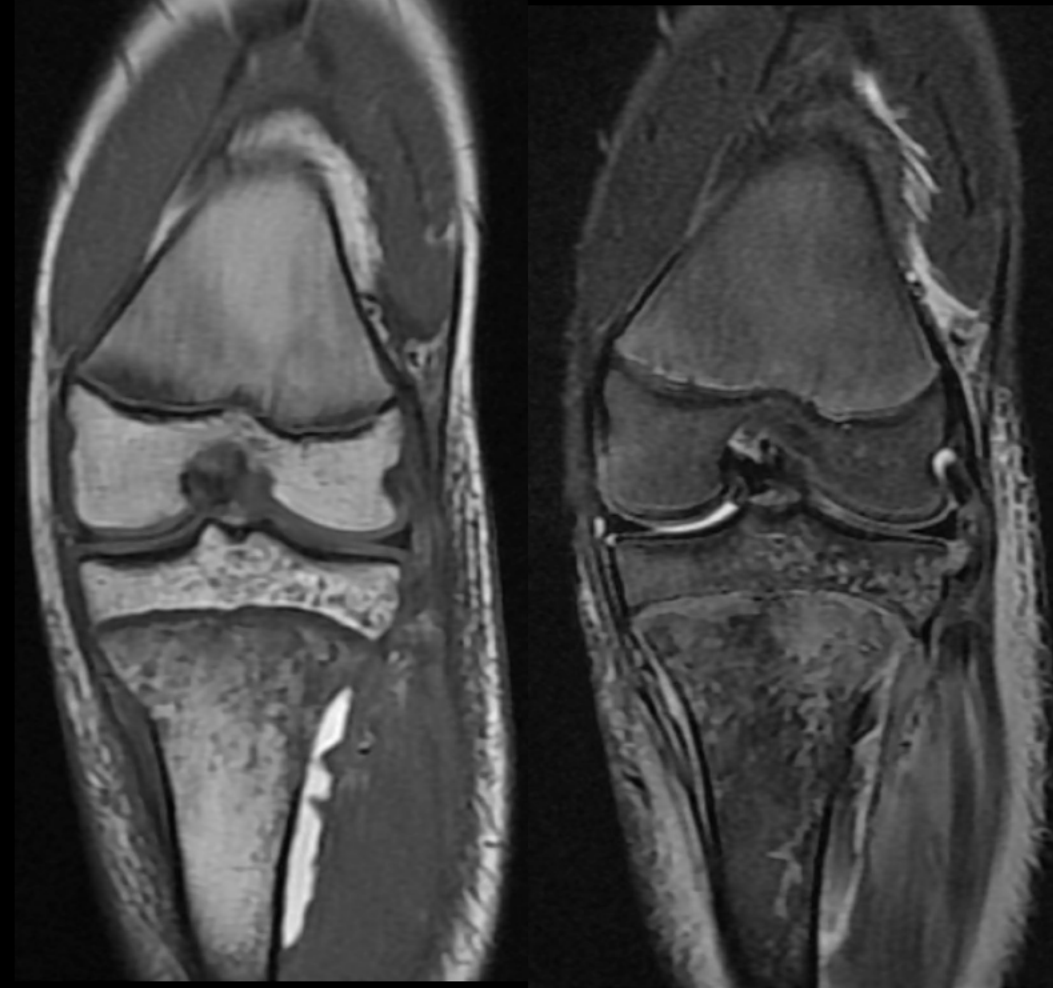


Findings

- Subcutaneous and perifascial edema
- Preserved osseous architecture
- Periosteal fat/fluid levels



Subsequent coronal T1 shows hyperintense periosteal collection which nulls on fat-suppressed coronal T2 confirming fat. Also, permeative metaphyseal marrow edema is evident.



Periosteal fat-fluid level in osteomyelitis

- Intramedullary and periosteal fat-fluid increase specificity for osteomyelitis
 - Necrosis of intramedullary lipocytes releasing fat
 - Periosteal leakage from increased intramedullary pressure and osseous breakdown
- More common in bones with higher yellow marrow
 - Puberty and older
- Associated with higher C-reactive protein levels
 - Related to acute nature; possibly virulence of organism
- Ddx for periosteal fat-fluid levels
 - Marrow infarction
 - Marrow infiltration
 - Trauma with intact periosteum

Reference

- Mattis TA, Borders HL, Ellinger DM, Junewick JJ. Relationship between clinical characteristics of osteomyelitis and the finding of extraosseous fat on MRI in pediatric patients. *Ped Radiol* (2011); 41:1293-1297.