

Coronal IR

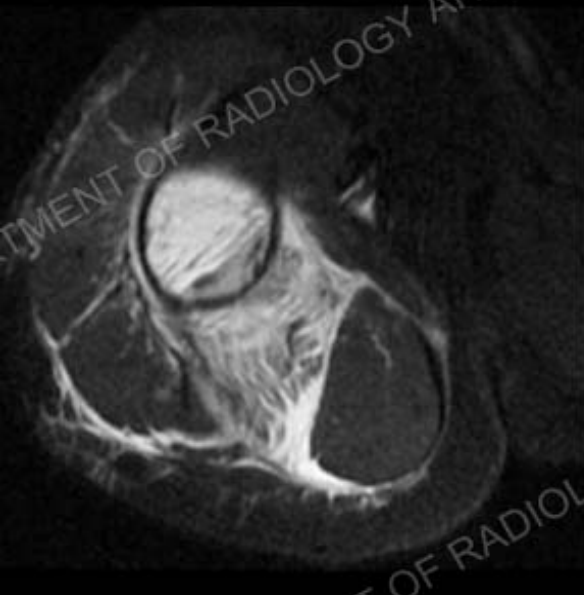
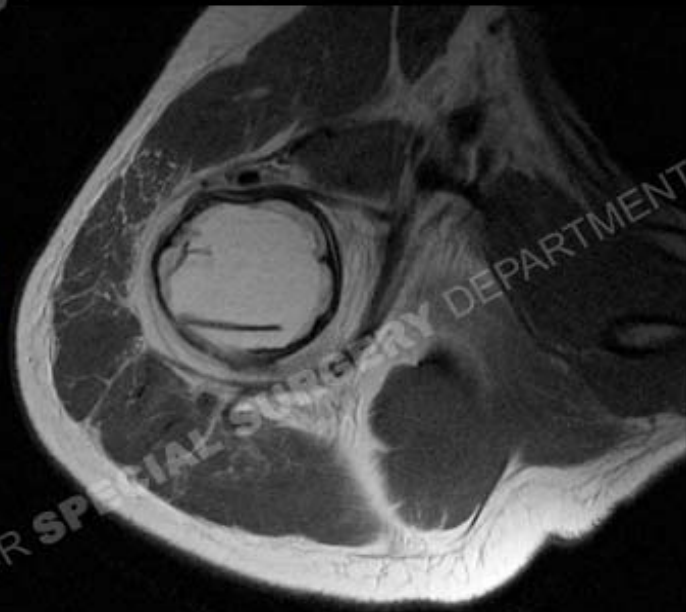


Sagittal PD

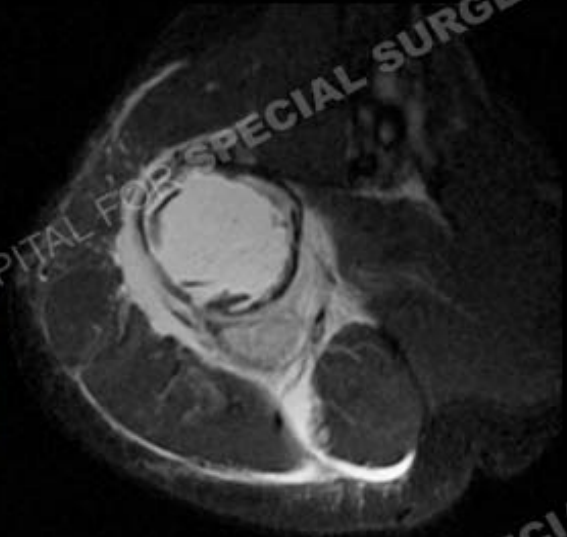
History: 8 year old boy with right arm pain after minor trauma
All images of MR exam are from 11/13/12



Axial PD



Corresponding
Axial IR images



Posterior
Coronal PD





5/21/12

11/29/12

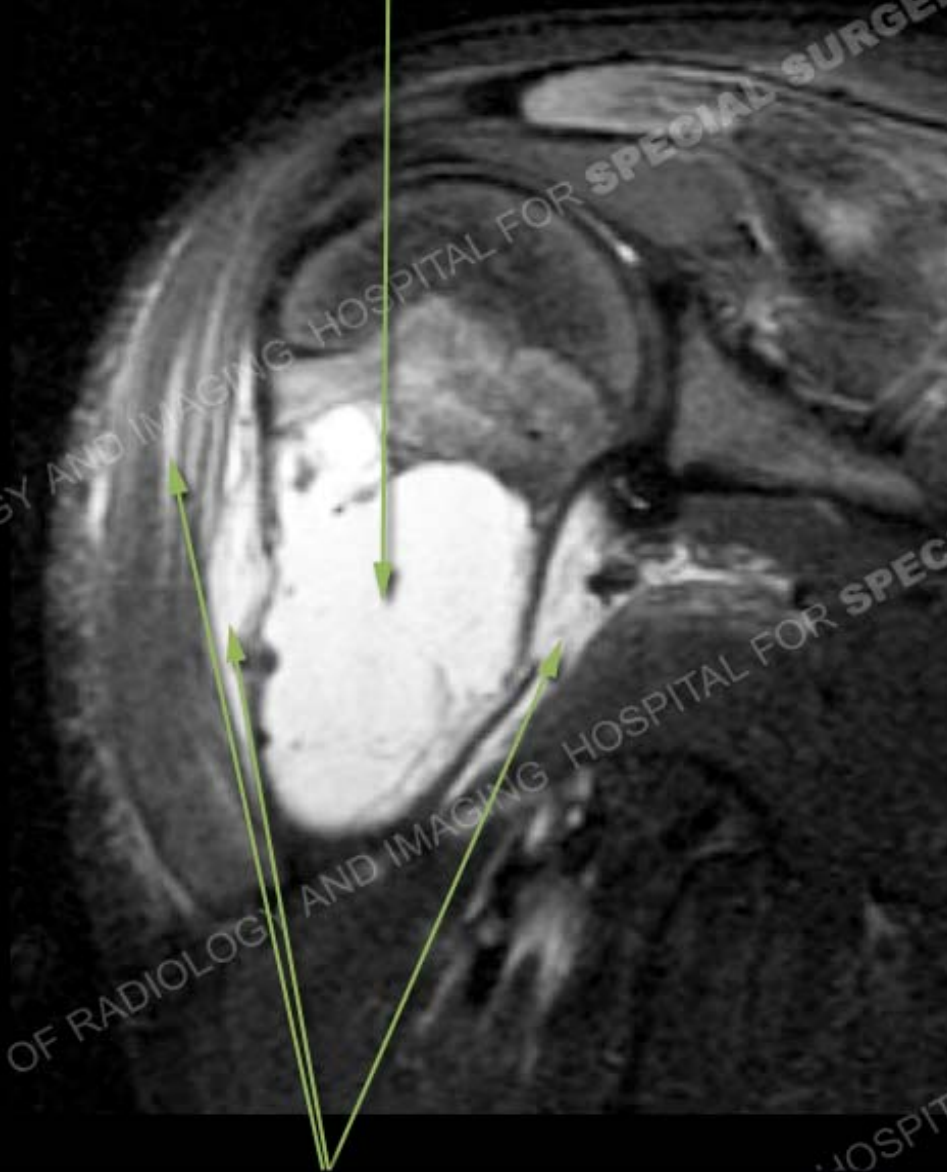


Findings

- MRI demonstrates a fluid signal intensity mass with a marked amount of surrounding periosteal edema and edema extending into the surrounding soft tissue. At the inferior margin of the lesion is a fluid fluid level. Low signal at the periphery of the lesion represent small internal septations. Radiographs demonstrate a well demarcated, metaphyseal, lucent lesion of the proximal humerus that on follow up exam demonstrates a change in alignment and periosteal reaction. A bone fragment is present as well as disruption of the cortex.



Fluid intensity mass of proximal humeral metaphysis



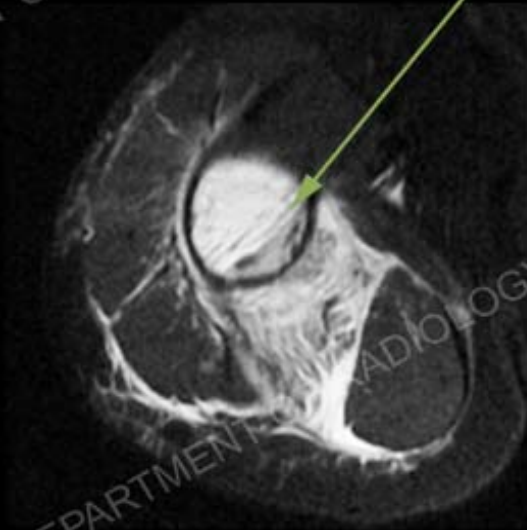
Periosteal edema and edema extending into the soft tissues

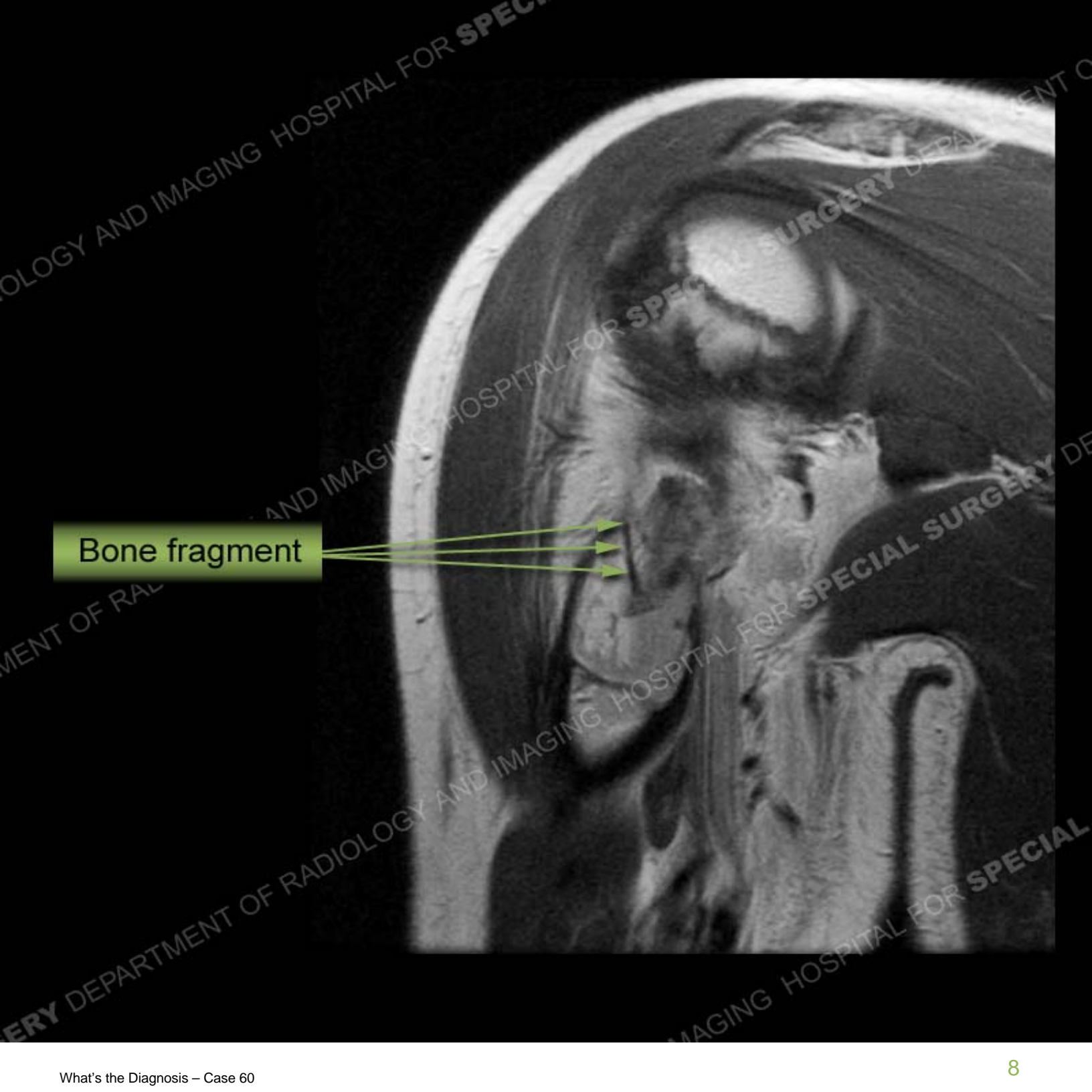


Fluid fluid level

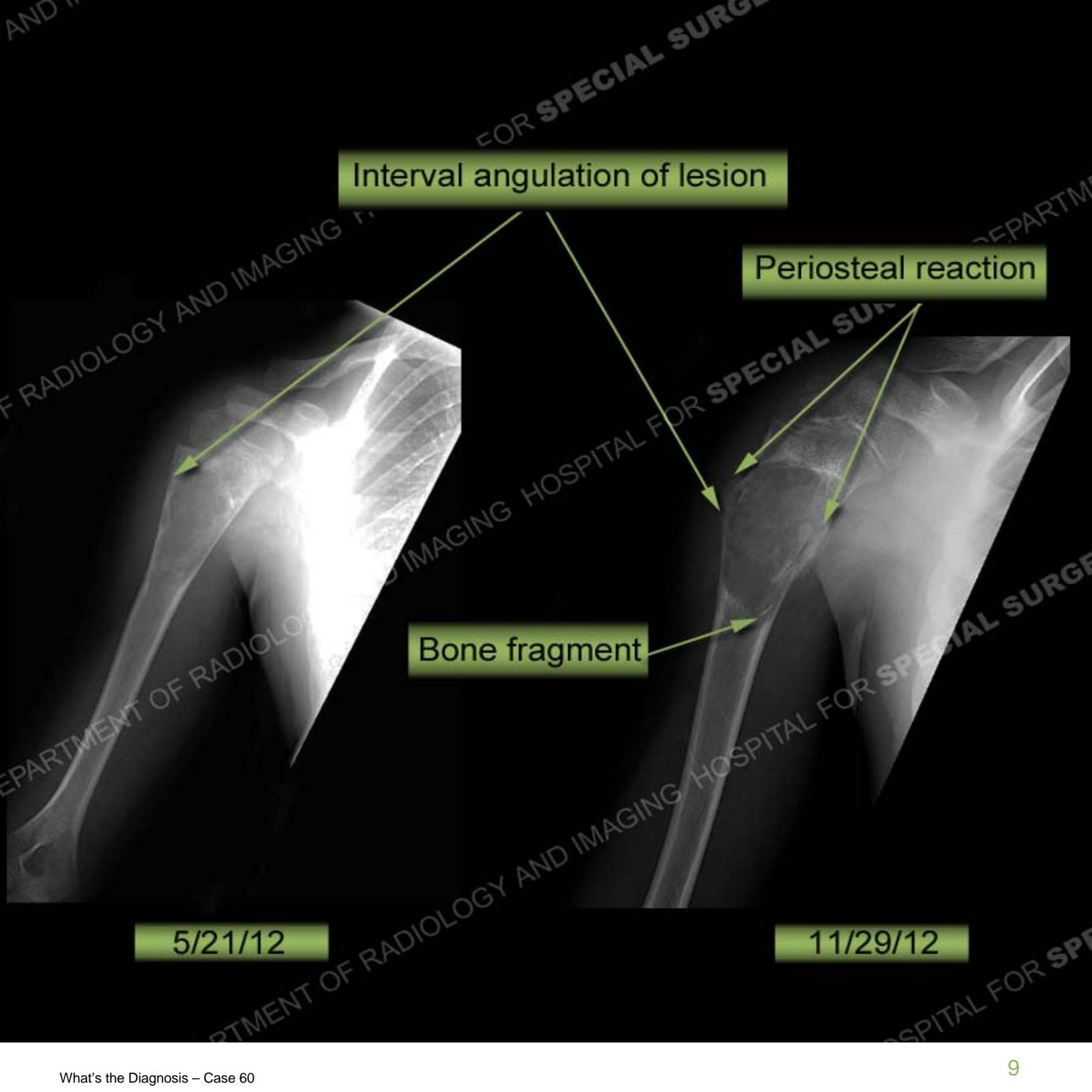


Small, internal septation





Bone fragment



Interval angulation of lesion

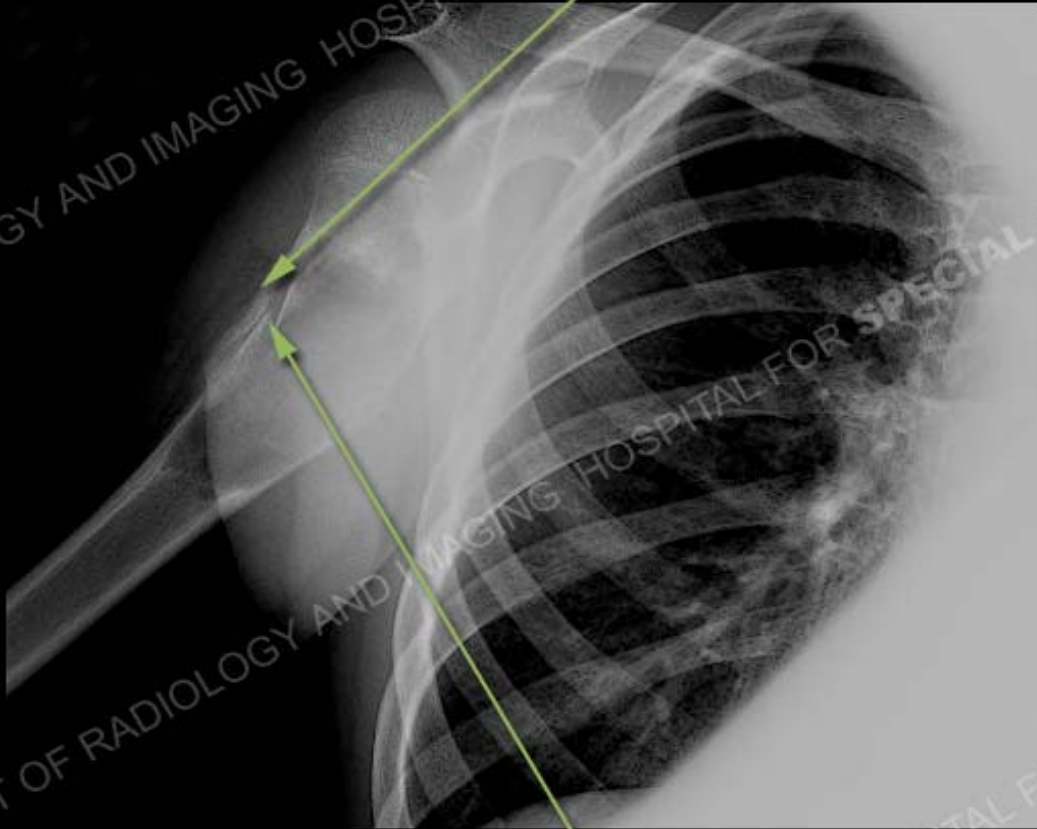
Periosteal reaction

Bone fragment

5/21/12

11/29/12

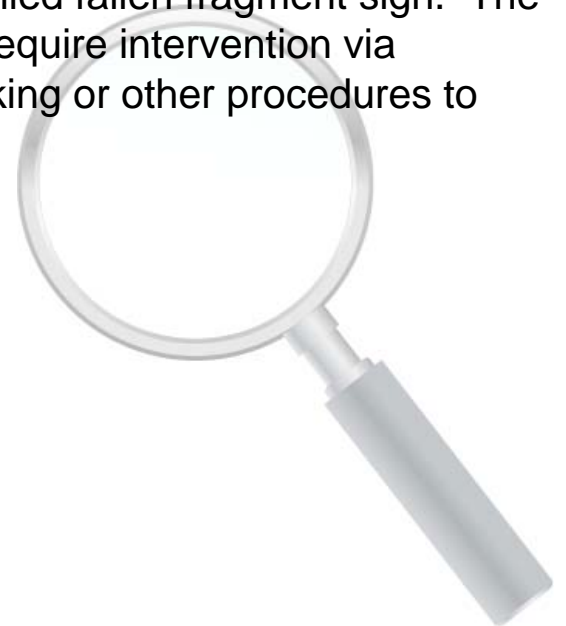
Periosteal reaction



Cortical disruption

Diagnosis: Pathological fracture of a unicameral bone cyst

- A unicameral bone cyst (UBC) is a lesion of bone with a single fluid filled chamber that is lined by a fibrous membrane. The lesions occur in children and young adults and tend to occur at the metaphyses, often adjacent to the growth plate. Although a single chamber, on MRI exam, small internal septations may be seen, frequently following previous trauma. However, multiple, fluid/fluid filled chambers are not present as would be seen in an aneurysmal bone cyst.
- UBC's may cause an erosion of the adjacent cortex but do not typically yield an expansion of the bone. As in this case, they may be complicated by fracture that cause bleeding into the cyst yielding fluid/fluid levels as well as in this case a bone fragment or so called fallen fragment sign. The lesions may regress spontaneously or may require intervention via orthopedic surgeons with curettage and packing or other procedures to produce healing.



Resources:

- Resnick. Diagnosis of Bone and Joint Disorders. 4th Ed. 2002.
- Bullough. Orthopedic Pathology. 4th Ed. 2004.

