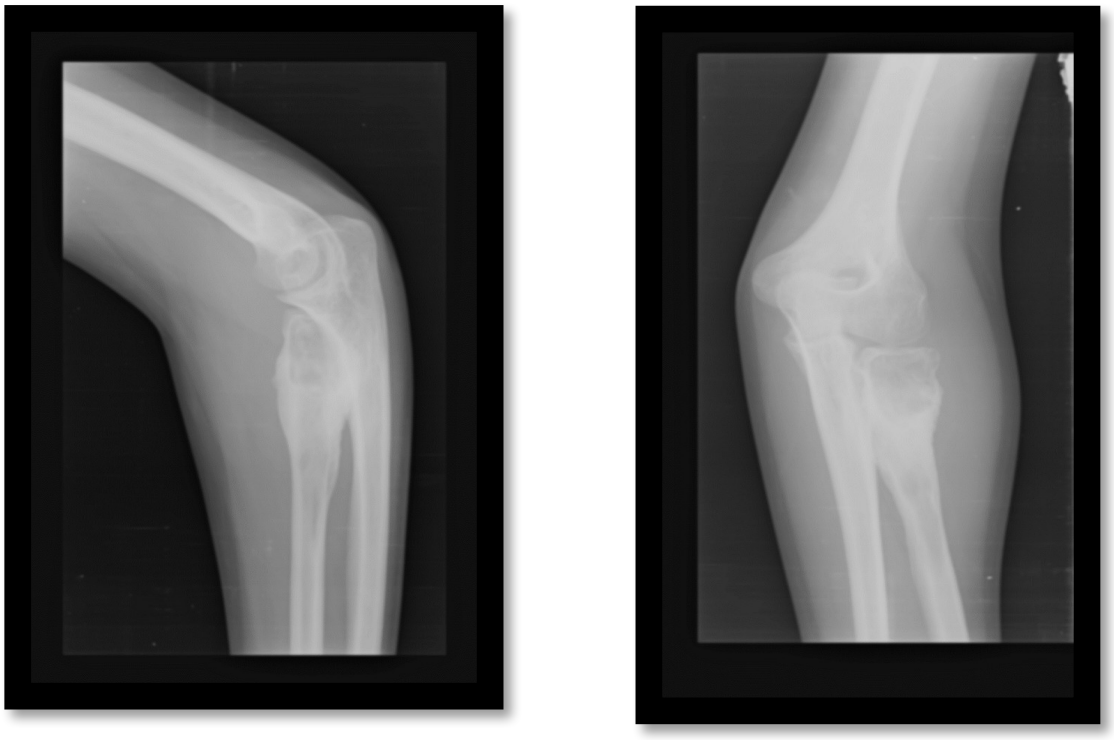
Clinical History

A 15 -year-old female presented with history of pain and swelling of proximal left arm with fever, with restricted and painful elbow movements.

The patient was examined to find local rise of temperature around left elbow with associated significant tenderness.

Initially – Radiograph was taken

Imaging Findings

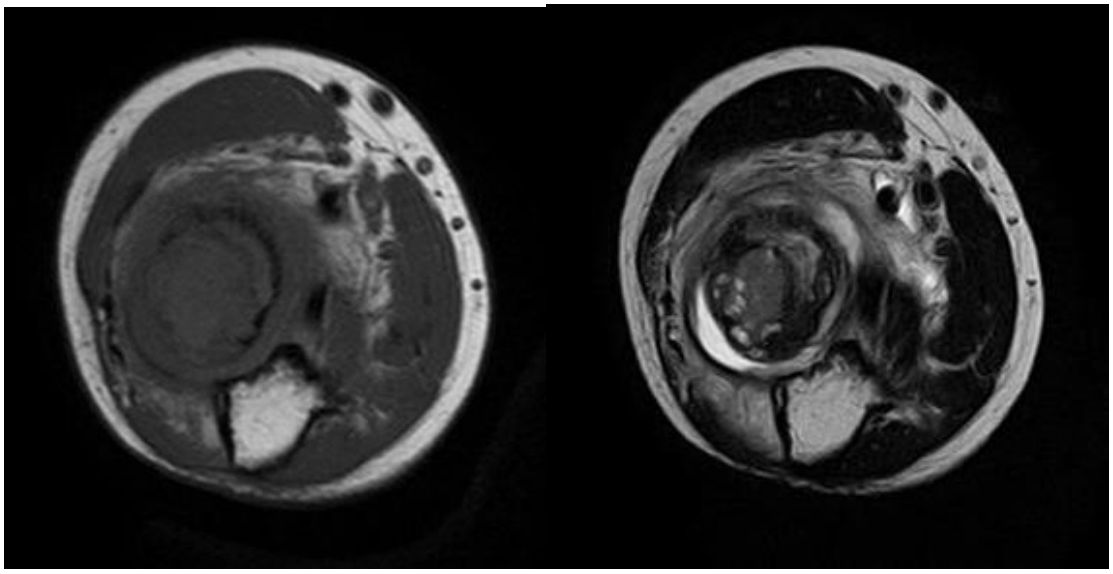


FRONTAL RADIOGRAPH OF LEFT ELBOW JOINT

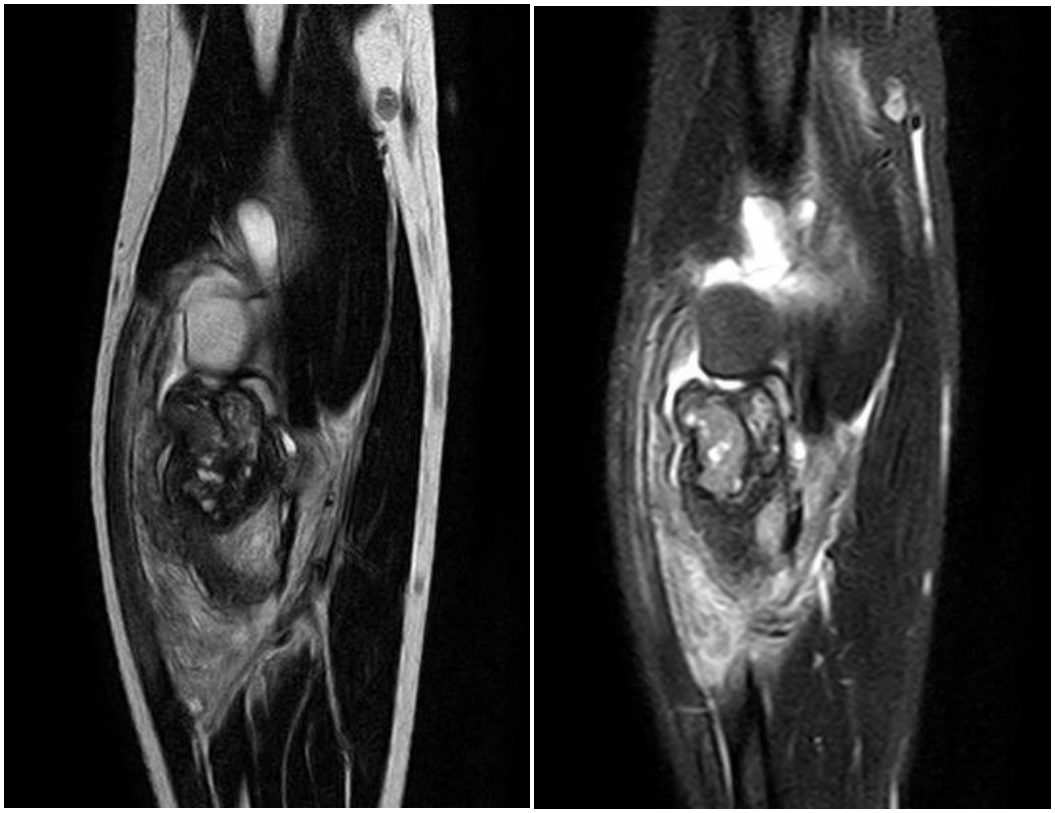
Well corticated Radiolucent lesion was visualized in subcortical epi-metaphyseal region of proximal left radius head with a narrow zone of transition.
No evident cortical breach / articular extension.
Solid lamellated type of periosteal reaction noted adjacent to the lesion with mild soft tissue swelling.
Rest of the Bones are normal in density and alignment.

Joint spaces and articular surfaces are normal.

MR was suggested for further evaluation.



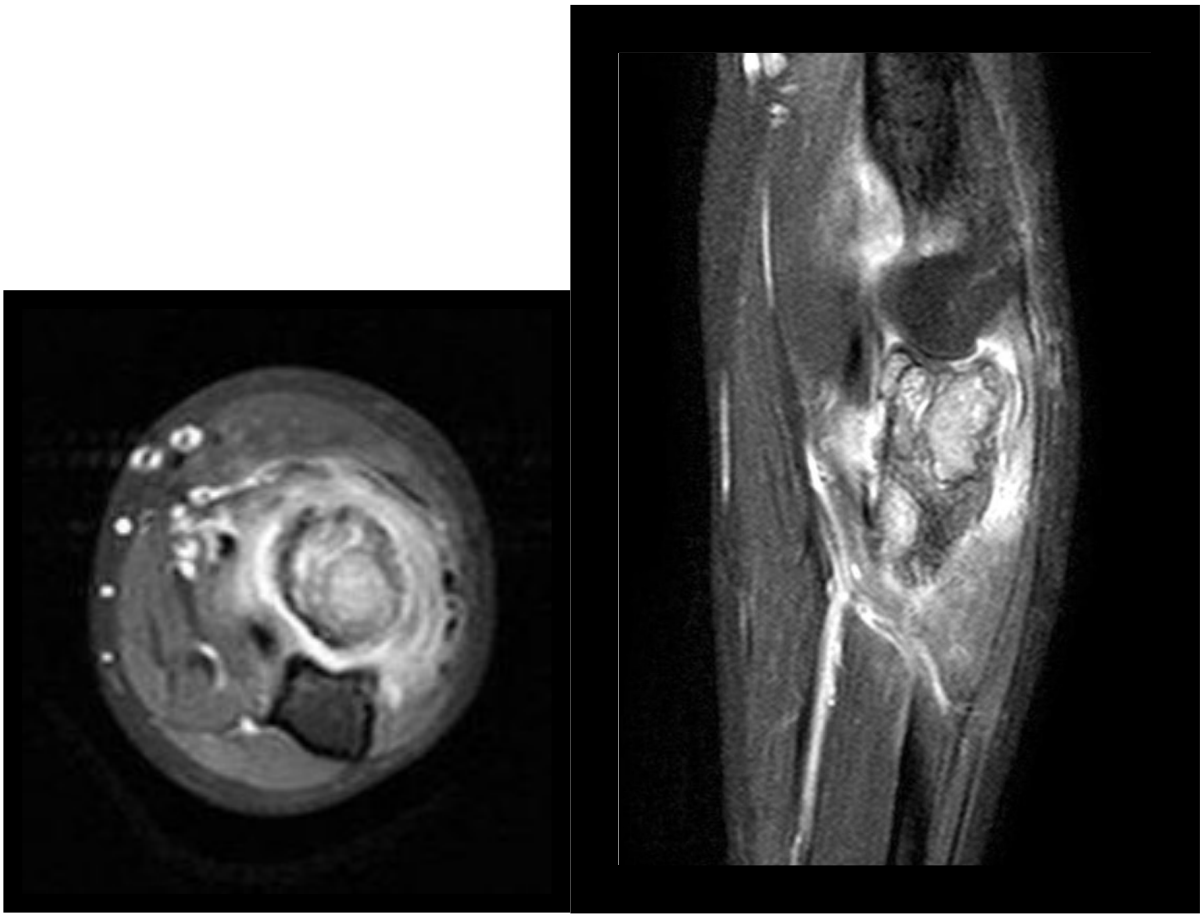
AX T1 AX T2



SAG T2 SAG STIR

PLAIN AND CONTRAST MR STUDY OF LEFT ELBOW JOINT SHOWED:

A relatively well-defined mildly expansile heterogeneously enhancing lesion appearing iso-intense to muscle on T1 and iso-to-hyperintense on T2 and STIR with small fluid intensity pockets and sclerotic margins is noted involving epi-metaphysis of head of left radius.
Areas of cortical thinning and cortical breaches are seen along the inferior aspect of the lesion.
Ill-defined enhancing STIR hyperintensity is also noted involving the marrow distal to the lesion.
Moderate elbow joint effusion is noted with smoothly thickened enhancing synovium s/o synovitis and ill-defined enhancement extending to muscles around the joint.



Post-contrast T1 FS axial and coronal images showing heterogeneous enhancement of the lesion.

Probable Imaging Differentials

1. Acute on chronic osteomyelitis. (in view of synovial enhancement, marrow oedema mild inflammatory changes and joint effusion).
2. Probable neoplastic aetiology (Chondroblastoma) with infection.

Clinical (lab) / histopathological correlation was suggested:

CT guided biopsy from the lesion was performed and HPE report revealed chondroblastoma.

Patient underwent complete excision of the lesion with bone graft.

Conclusion

Take home nugget:
Chondroblastoma is cartilaginous neoplasm affecting the epiphysis in skeletally immature individuals – typically age of occurrence is <20 years. Appearing as a well-defined lucent lesion, with either smooth or lobulated margins and a thin sclerotic rim, arising from the epiphysis of long bones. Internal calcifications can be seen in 40-60% of cases and joint effusion is seen in one-third of patients.

Osteomyelitis can mask the typical characteristics of bone neoplasms.
Thus on dealing with aggressive appearing lesions even when backed by staunch clinical signs of infective etiology, underlying neoplasm cannot be ruled out!!!.