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KARNATAKA RADIOLOGY EDUCATION PROGRAM

Painful OO's differential diagnoses main imaging findings

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X RAY FOREARM

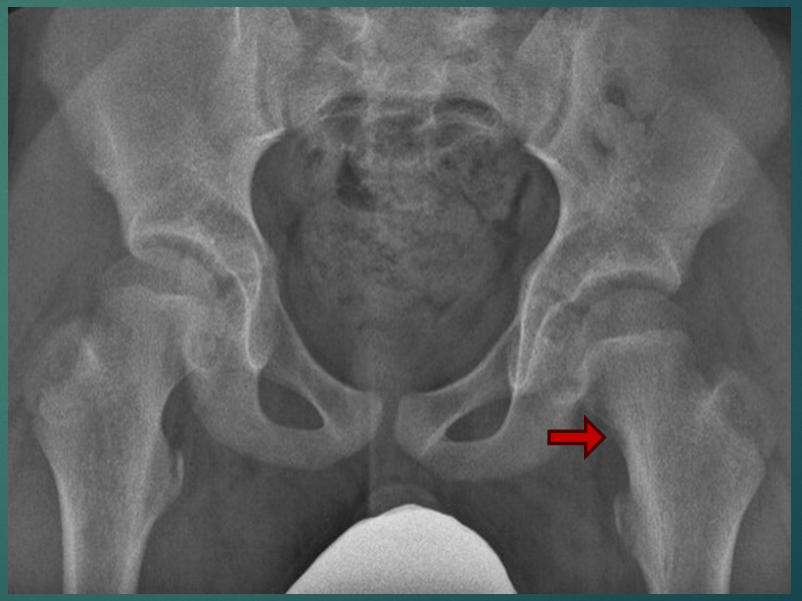
- The X ray reveals a central lucency running perpendicular to the bone cortex.
- Slight angulation of the radial diaphysis.
- The fracture involves one side of the radius and extends incompletely through the bone

CLINICAL DETAILS

- Chronic nocturnal left hip pain with limited flexion and rotation.

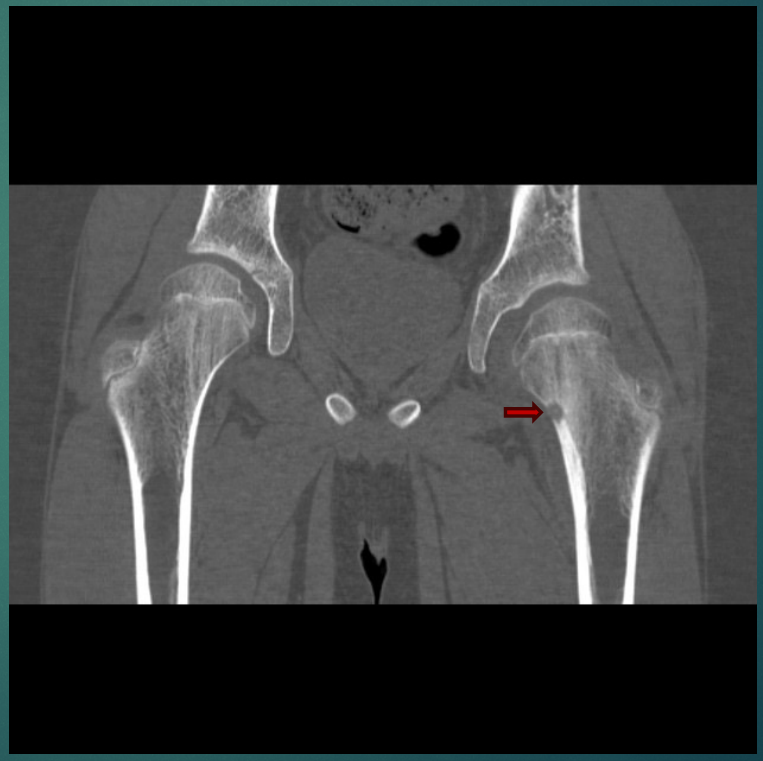
X RAY-PELVIS WITH BOTH HIP

- Sclerotic periosteal reaction and thickening at the medial aspect of the left femoral neck with a defined oval lucency. - intracortical lytic lesion



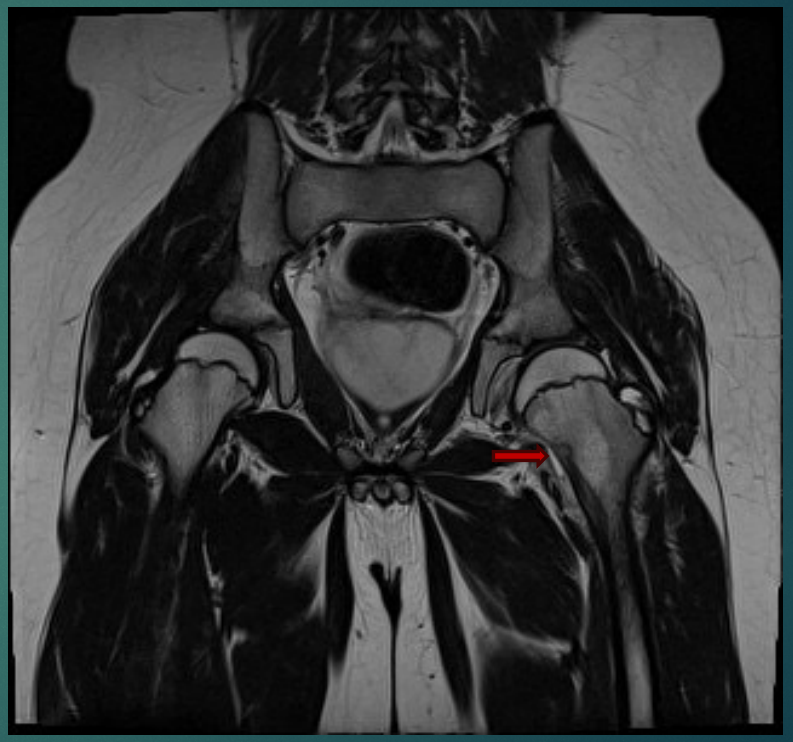
CT FINDINGS

- Thickened cortex and a rounded cortical lucency noted showing a faint central nidus.



MRI FINDINGS

- The MRI demonstrates the lesion as T2 bright signal well defined area and low signal sclerotic periosteal reaction



DIAGNOSIS

- OSTEOID OSTEOMA

DIFFERENTIAL DIAGNOSIS

Differential diagnoses	Key points
Osteomyelitis/intraosseous abscess	Uneven inner margin; irregularly shaped and eccentrically located sequestrum; usually intramedullary located and larger than 2.0 cm; does not enhance in its central portion; penumbra sign may be present
Fracture/stress reaction	Fracture line may be present; lack of a nidus; Follow-up imaging can be helpful in doubtful cases because the bone marrow edema regress over time and the fracture consolidates
Osteoblastoma	Larger than 2.0 cm; less painful; fewer inflammatory changes and reactive sclerosis; smaller response to salicylates; grow progressively; malignant potential and may be associated with other tumors
Glomus tumor	Well-defined nodule in the nail bed; no thickening of the rest of the nail bed or matrix; may exhibit well-defined remodeling of the dorsal cortical of the distal phalanx
Chondroblastoma	Epiphyseal intramedullary location; lobulated contours; larger dimensions; chondral calcifications and signal intensity

FEATURES	TYPICAL OSTEOID OSTEOMA	ATYPICAL OO
Number	Single nidus	Multicentric or metachronous
Location within bone	Cortical	Medullary or subperiosteal
Location along bone	Diaphysis	Metaphysis or epiphysis (including intra-articular)
Distribution	Long bones (especially femur and tibia)	Extremities and axial skeleton

CONCLUSION

- Osteoid osteoma is a painful, benign and common bone tumor that is prevalent in young adults. The typical clinical presentation consists of pain that becomes worse at night and is relieved by nonsteroidal anti-inflammatory drugs.
- The most common imaging finding is a lytic lesion, known as a nidus, with variable intralesional mineralization, accompanied by bone sclerosis, cortical thickening and surrounding bone marrow edema, as well as marked enhancement with intravenous contrast injection.
- When the lesion is located in typical locations (intracortical bone and the diaphyses of long bones), both characteristic clinical and radiological features are diagnostic.
- However, osteoid osteoma is a multifaceted pathology that can have unusual presentations, such as intraarticular osteoid osteoma, epiphyseal location, lesions at the extremities and multicentric nidius, and frequently present atypical clinical and radiological manifestations.
- In addition, many conditions may mimic osteoid osteoma and vice versa, leading to misdiagnosis.

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THANK YOU