

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Pediatric Radiology Quiz – Case 7

An 8-year-old boy presented to the Emergency Department of our hospital with right hip pain, accompanied by no history of trauma. His mother mentioned that the boy was occasionally complained for right hip pain during the last 6 months. The local pain was worsening at night and the boy had lost his appetite. X-rays of right femur showed a sclerotic lesion medially near the lesser trochanter with a suspicion of a small lucency (figures 1 a, b). Laboratory tests were unremarkable; hip ultrasound had no pathologic findings. Although the clinical and radiological

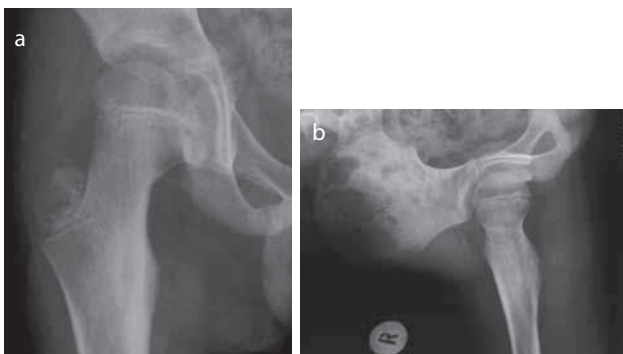


Figure 1. (a) Anteroposterior and (b) frog-lateral X-rays: A sclerotic lesion near the lesser trochanter with a suspicion of a small lucency (nidus).

ARCHIVES OF HELLENIC MEDICINE 2014, 31(4):503–504
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2014, 31(4):503–504

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suspicion of osteoid osteoma, due to the mentioned appetite loss, the boy was referred for a focused low dose computed tomography (CT) scan of the upper right femur bone. Non contrast enhanced CT (NECT) was performed that revealed a small, well-defined round nidus surrounded by reactive sclerosis, which confirmed the diagnosis (figures 2 a, b, c).

Comment

Osteoid osteoma is a benign tumor consisting of a small nidus of vascular osteoid tissue. Its size is about 5–15 mm in diameter; it may have a sclerotic center. The nidus shows intense contrast enhancement in most cases. There are four types of osteoid osteoma: (a) Cortical type (most frequent), with intense reactive sclerosis around the nidus that is located in the cortex, (b) medullary-type, with a densely

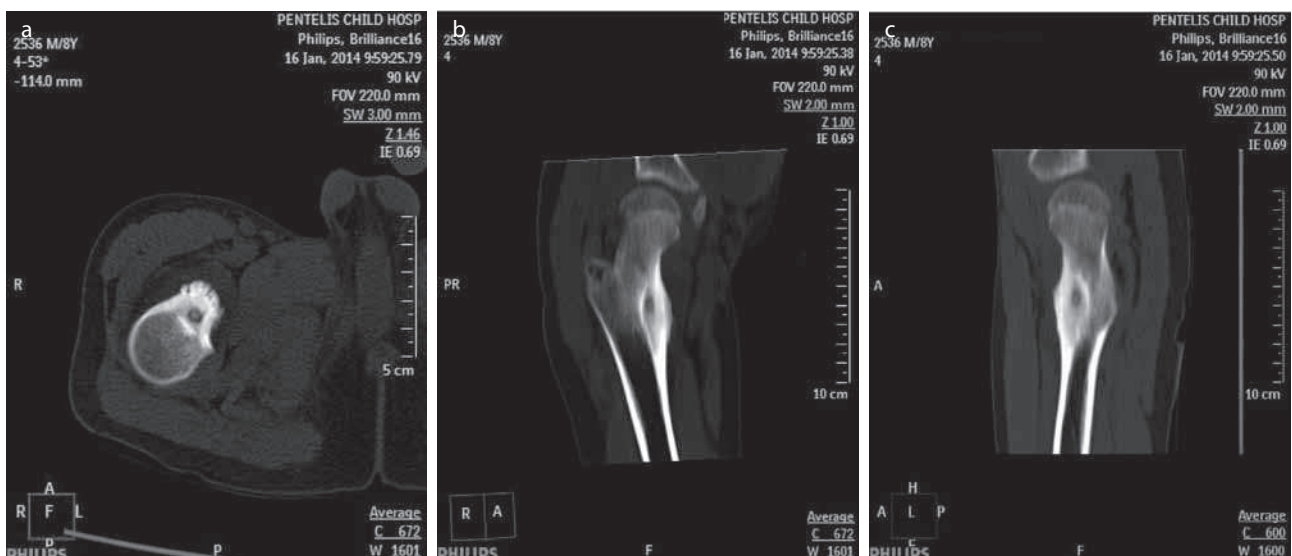


Figure 2. NECT of proximal right femur bone: A well-defined round nidus close to the medially lesser trochanter surrounded by reactive sclerosis (a: axial, b: coronal and c: sagittal view).

calcified nidus within the medullary cavity, that is surrounded by an halo of hypervascularized osteoid tissue (bull's eye sign), (c) subperiosteal type, with a calcified nidus and no reactive sclerosis and (d) periarticular type, with little if any reactive sclerosis. Osteoid osteoma resembles osteomyelitis; thus, sometimes it cannot be reliably differentiated with x-rays, CT or magnetic resonance imaging (MRI). Because its nidus is highly vascular, it accumulates radioactive bone scanning isotopes; in particular, there is an area of increased uptake corresponding to the area of reactive sclerosis and a second area of increased uptake corresponding to the nidus (double density sign).

References

1. CHAI JW, HONG SH, CHOI JY, KOH YH, LEE JW, CHOI JA ET AL. Radiologic diagnosis of osteoid osteoma: From simple to challenging findings. *Radiographics* 2010, 30:737–749

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