

Secondary multifocal osteosarcoma developing on the background of bone infarct

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DESCRIPTION

A 49-year-old-man presented to orthopaedics clinic with complaint of recently growing thigh pain. He had a history of oral and inhaler forms of steroid usage for asthma and allergy on his background. X-ray examination of the left femur showed medullary lytic lesions localised in distal diaphysis–metaphysis causing cortical destruction (**figure 1**). Contrast-enhanced MRI revealed medullary bone infarcts in distal diaphysis–metaphysis of the distal femur and proximal tibia bilaterally (**figure 2**). In this infarct area, there were multiple lesions causing cortical destructions with soft tissue components, and showing prominent enhancement on postcontrast images. The largest one is measured 4×2.5 cm. Multiple smaller lesions which were presenting

similar imaging characteristics without soft tissue components were also seen. Histological evaluation revealed the diagnosis of osteosarcoma.

Secondary osteosarcoma is the term referred to osteosarcomas developing on the background of conditions like Paget's disease, fibrous dysplasia and bone infarct. Osteosarcomas developing secondarily on the ground of bone infarcts are quite rare in this group.¹ Infarcts can be seen in the diaphysis, metaphysis or epiphysis in long bones. Epiphyseal bone infarcts can be recognised and treated at an early stage since they are usually symptomatic. However, diaphyseal and metaphyseal infarcts may not get an early diagnosis since they can be asymptomatic for a longer time. Therefore, neoplasia development on the background of infarcts frequently occur in the medullary cavity of diaphysis.² The most common malignancies arising on this ground are pleomorphic undifferentiated sarcoma and osteosarcoma.



Figure 1 (A, B) X-ray examination of the left femur showed the medullary lytic lesions (arrows) localised in distal diaphysis–metaphysis causing cortical destruction.

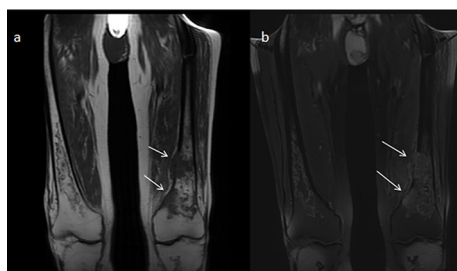


Figure 2 T1-weighted (A) and T2-weighted fat saturated (B) MRIs reveal medullary bone infarcts in distal diaphysis–metaphysis of the distal femur and proximal tibia bilaterally. In this left infarct area, there are multiple lesions (arrows) causing cortical destructions with soft tissue components and the largest one is measured 4×2.5 cm.

Learning points

- ▶ Secondary osteosarcoma is the term referred to osteosarcomas developing on the background of conditions like Paget's disease, fibrous dysplasia and bone infarct.
- ▶ Epiphyseal bone infarcts can be recognised and treated at an early stage since they usually cause symptoms. However, diaphyseal and metaphyseal infarcts may not get an early diagnosis since they can be asymptomatic for a longer time.
- ▶ The most common malignancies arising on the background of bone infarct are pleomorphic undifferentiated sarcoma and osteosarcoma.

Contributors AKS,SA and HÖ conceived the paper. AKS and SA assembled the case history from hospital records. AKS and SA participated in the writing of the paper. HÖ approved the final version.

Competing interests None declared.

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