

## Clinical Image

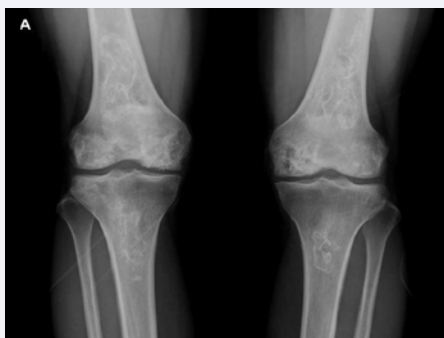
# Bilateral Knee Avascular Necrosis in Systemic Lupus Erythematosus-Associated Antiphospholipid Syndrome

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## CLINICAL IMAGE

The 36-year-old woman, a case of systemic lupus erythematosus (SLE) diagnosed at the age of 23, had serial high titers of IgG isotype anticardiolipin antibodies. She received total hip replacements due to avascular necrosis (AVN) of bilateral hips. Livedo reticularis developed later, and there was bilateral knee pain without initially abnormal findings on plain radiographs. She suffered from digital gangrene over bilateral hands and antiphospholipid syndrome (APS) was diagnosed at the age of 31. Warfarin was prescribed and further replaced with subcutaneous injection of low-molecular-weight heparin due to the severe bleeding episodes. There was persistent knee pain, and knee X-rays showed serpiginous calcified lesions in the bilateral distal femora and proximal tibiae with involvement of the articular surfaces, characteristic of AVN with bone infarction (Figure 1). The sagittal magnetic resonance imaging (MRI) pictures (Figure 2) revealed well-defined serpiginous sclerotic lesions in the bilateral distal femora and right proximal tibia and bilateral patellae surrounded by hyperintense rims on proton density-weighted images with fat suppression corresponding to the double line sign, compatible with the findings on X-rays. Bilateral knee AVN was diagnosed. Although the corticosteroid



**Figure 1** Serpiginous calcified lesions in the bilateral distal femora and proximal tibiae, characteristic of avascular necrosis with bone infarction in the plain radiograph.

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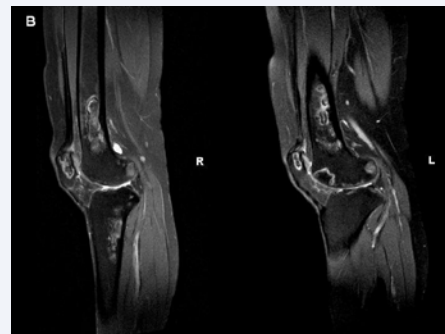
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**Figure 2** Well-defined serpiginous sclerotic lesions with geographic margins in the marrow cavities of the bilateral distal femora and right proximal tibia and bilateral patellae surrounded by hyperintense rims corresponding to the double line sign in MRI pictures.

usage is a significant risk factor for osteonecrosis in SLE, AVN of bone associated with APS has been reported [1,2]. Ischemia of the bone due to underlying vascular microthrombosis could be responsible for such an association. For the long-lasting knee pain in APS patients, MRI images provide a more sensitive and specific detection of AVN than plain radiographs [3].

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