

Steroid-induced bicondylar osteonecrosis of both femurs in a patient with Behçet's disease

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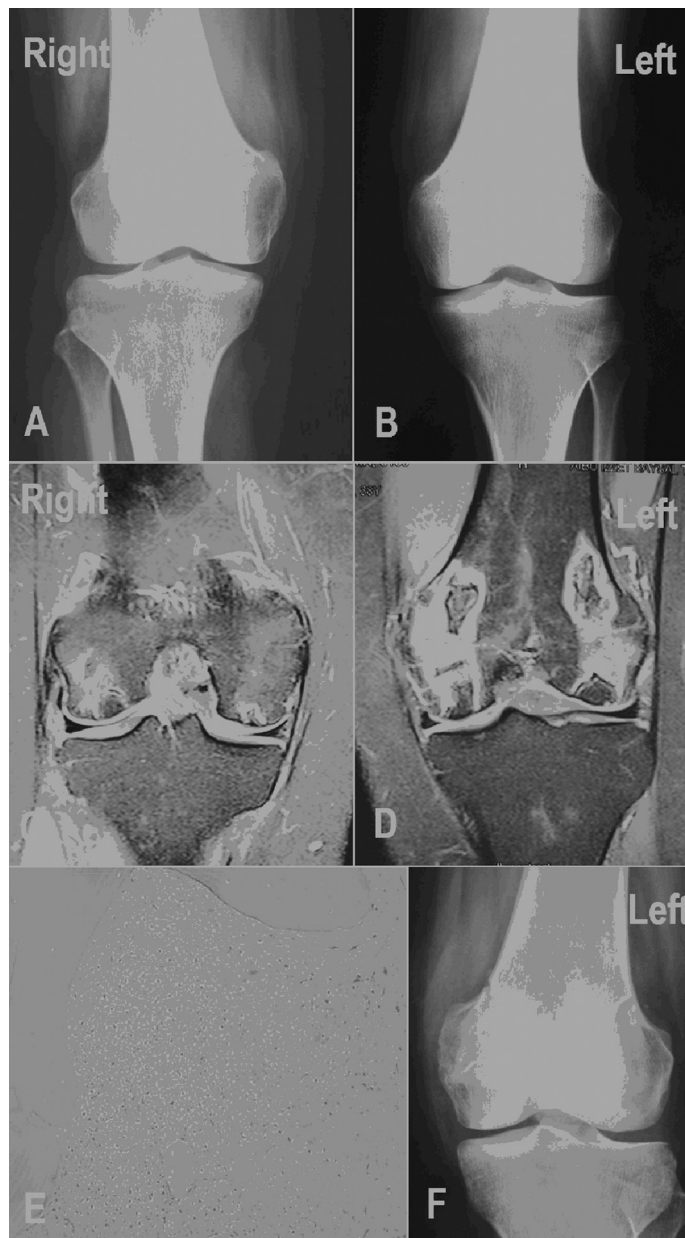
Patients with rheumatologic diseases such as systemic lupus erythematosus and rheumatoid arthritis are generally associated with osteonecrosis of the hip and/or knee joints due to corticosteroid treatment (1). Although corticosteroids are commonly used for the treatment of active Behçet's disease (BD), osteonecrosis associated with BD has been rarely reported in the literature (2-5). We present a patient with BD who had bicondylar osteonecrosis of both femurs.

A 38-year-old female patient who had been diagnosed as BD 7 months before was referred to our hospital due to left knee pain that had begun two weeks earlier without a history of trauma. According to her past medical history; she had oral ulcers 5 to 6 times/year with 5-year duration and genital ulcers persisting for one year. In the ophthalmologic examination there were acute panuveitis in the left eye and chronic uveitis in the right eye. The pathergy test was positive. She had been started on treatment with 1mg/kg/day metiprednisolone, 150 mg/day azathiopurine, 1.5 mg/day colchicine, 5 mg/day warfarin and 500 mg/day acetazolamide. The dosage of corticosteroid was decreased in the second week to 4 mg/week, and she received 4 mg/day metiprednisolone on presentation.

On physical examination, her left knee was mildly swollen without redness and local heat. There was mild tenderness over the medial and lateral aspects of the knee without any restriction of range of motion. C-reactive protein and erythrocyte sedimentation rate were 68mg/dl and 60mm/hour respectively. The other haematological and biochemical tests were normal. No anticardiolipin IgM and IgG antibodies were detected.

Plain radiographs of both knees showed no narrowing of the joint space and no visible erosive and destructive changes on the femoral condyles and the tibial plateau (Fig. 1A and B). However, MRI examination of both knees showed extensive bone marrow lesions that were compatible with bone infarction (Fig.1C and D). Based on these changes, she was diagnosed as bilateral, bicondylar femoral osteonecrosis, and the patient was referred to the orthopaedics department. Surgery was recommended for the left side. Under general anesthesia, debridement and curettage of the dead bone and bone grafting were applied. The histopathological results of the tissue samples were found to be consistent with osteonecrosis of the femoral condyles (Fig. 1E). The patient had six weeks of weight-bearing activity on the right lower extremity with active range of motion of the left knee joint. At the six-month follow-up, she was able to walk with

Fig. 1. Plain radiographs of both knees (A and B) show no visible erosive and destructive changes on the femoral condyles and tibial plateau. However, coronal scans of magnetic resonance imaging (C and D) show multiple and irregularly shaped osteonecrotic lesions, especially in the left knee. Histopathological investigation of tissue samples (E) shows necrotic cell debris in bone trabeculae and medullar tissue (Hemotoxylin & Eosin, 200x). At the six-month follow-up, plain radiograph of the left knee (F) shows preserving of the joint space.



full weight-bearing on both lower extremities without the assistance of crutches (Fig. 1F). She is currently receiving the same medical treatment.

Ronco *et al.* (2) presented four patients with BD, who were treated with high doses of corticosteroids during a mean period of 21 months, and developed osteonecrosis of the femoral heads and femoral condyles. Chang *et al.* (3) reported two cases with BD developing osteonecrosis. One of them developed extensive bone infarction of the left knee without use of corticosteroids and was treated conservatively. The other patient had osteonecrosis of the right femoral head with a history of significant corticosteroid administration and was treated by total joint arthroplasty. The common feature of these two patients was positive anticardiolipin antibodies. It has been reported in the litera-

ture that antiphospholipid antibodies which include IgM and IgG anticardiolipin antibodies could play some role in the pathogenesis of osteonecrosis in rheumatologic diseases (6, 7). However, this argument still remains controversial. Zouboulis *et al.* (8) found moderately raised levels of circulating anticardiolipin antibodies in 14 of 30 patients (46.7%) with active BD. Nevertheless, they concluded that anticardiolipin antibodies did not play a major pathogenetic role in this disease. al-Dalaan *et al.* (9) reported that the association of anticardiolipin antibodies with vascular thrombosis of central nervous system manifestation of BD was statistically not significant. In the case presented here, the responsible factor for osteonecrosis was considered to be the short-term (7 months) corticosteroid treatment.

Plain radiographs are often normal during the early stage of this condition. In such cases, MRI or scintigraphic evaluation might provide an early diagnosis. In addition, the extent of osteonecrotic lesion, as seen on MRI, is usually greater than that visualised on plain radiographs, as in the presented case. The aims of the early surgical intervention are to prevent further collapse, the development of osteoarthritis and the need for a total knee arthroplasty. If osteonecrosis is predicted in one side, the other side should be evaluated with MRI even if it is asymptomatic and should be followed up closely.

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