MULTIFOCAL OSTEONECROSIS IN SYSTEMIC LUPUS ERYTHEMATOSUS CONSEQUENT TO CORTICOSTEROID USE
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Abstract: Osteonecrosis is a known complication of steroid use. It is caused by judicious use of steroids and potentially treatable if recognized early. Conventional radiography detects advanced disease. It usually affects a single joint, however rarely it can involve multiple joints, especially in patients receiving corticosteroids. Here we present a case of multifocal osteonecrosis in a patient of systemic lupus erythematosus on chronic steroid use who was detected at an advanced stage.

Key Words: Osteonecrosis, systemic lupus erythematosus, corticosteroid

Introduction:
Osteonecrosis is an under-recognized complication of steroid use and often by the time it is recognized it is already advanced. Osteonecrosis can affect multiple joints and the commonest cause of such multifocal osteonecrosis is steroid therapy. Early recognition of this condition can significantly prevent morbidity. Herein, we present a case of multifocal osteonecrosis developing in a patient of systemic lupus erythematosus (SLE) following corticosteroid use.

Case history:
A 33-year-old female, a known case of systemic lupus erythematosus with renal involvement for 15 years, on chronic corticosteroid therapy along with azathioprine, presented in the year 2001 with complaints of pain in the left groin for 6 years followed by limping. Examination revealed limitation of movement in the left hip joint with shortening of affected limb. Radiograph of the hip joint revealed osteonecrosis of the left femoral head. The corticosteroid dose was reduced but had to be continued because of her renal disease. Three years later, she developed pain in the right hip and right shoulder regions. Examination showed limitation of abduction of right shoulder with restriction of movements of right hip joint. Radiograph revealed osteonecrosis of right humeral (Figure 1) and right femoral head (Figure 2). She continues to receive corticosteroids in low dose as further tapering is associated with flare of skin and renal manifestations. Bilateral hip arthroplasty was suggested to her.

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Figure 1: Osteonecrosis of the right humeral head

Figure 2: Radiograph pelvis showing bilateral femoral head osteonecrosis
Multifocal osteonecrosis in systemic lupus erythematosus consequent to corticosteroid use

Discussion:
Osteonecrosis is a clinico-radiological entity characterized by death of bone marrow and trabecular bone as a result of disruption of vascular supply to the bone. It is a final common pathway of a number of conditions, both traumatic and non-traumatic. The prevalence of osteonecrosis in SLE patients on corticosteroids is reported to be higher than in non-SLE patients on corticosteroids. About 90% of all recognized cases of multi-focal osteonecrosis have been treated with steroids. The prevalence of symptomatic osteonecrosis in SLE has been described to be close to 12% and often involves multiple joints. Glucocorticoid therapy, presence of arthritis and the use of cytotoxic drugs are independent risk factors for the development of osteonecrosis in SLE.

The role of anti-phospholipid antibodies in the development of this condition is controversial. The time of onset of osteonecrosis in SLE is usually within the first month of high dose corticosteroid treatment. High-risk patients should be closely monitored so that early osteonecrosis can be diagnosed by sensitive techniques such as magnetic resonance imaging and radioisotope bone scanning. The long term prognosis of early stage necrosis is favorable in SLE patients when the necrotic area is less than 25%. Whenever moderate or high dose corticosteroid therapy is undertaken, the risk of bone necrosis must be recognized. The dose of corticosteroid should be kept to the minimum required. However, it should be remembered that low dose therapy does not protect against this condition. Weight bearing on the affected limb should be restricted for a few weeks. SLE should not constitute a contradiction to hip arthroplasties as the short and medium term results are similar to those who had hip replacements for other reasons. Patients receiving corticosteroids if complain of joint pains should be promptly evaluated for osteonecrosis. A normal radiograph would not exclude osteonecrosis and when required, other more sensitive modalities such as magnetic resonance or radionucleide bone scanning should be used.

References: