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Leuprolide Induced Scleroderma Renal Crisis: A Case Report

Authors : Nirali Sanghavi, Julia Ash, Amy Wasserman

Abstract : Introduction: To the best of our knowledge, there is only one case report that found an association between leuprolide and scleroderma renal crisis (SRC). Leuprolide has been noted to cause acute renal failure in some patients. Given the close timing of the leuprolide injection and the worsening renal function in our patient, leuprolide likely caused exacerbation of lupus nephritis and SRC. Interestingly, our patient on long-term hydroxychloroquine (HCQ) with normal baseline cardiac function was found to have HCQ cardiomyopathy highlighting the need for close monitoring of HCQ toxicity. We know that some of the risk factors that are involved in HCQ induced cardiomyopathy are older age, females, increased dose and >10 years of HCQ use, and pre-existing cardiac and renal insufficiency. Case presentation: A 34-year-old African American woman with a history of overlap of systemic lupus erythematosus (SLE) and scleroderma features and class III lupus nephritis presented with severe headaches, elevated blood pressure (180/120 mmHg) and worsening creatinine levels (2.07 mg/dL). The headaches started 1 month ago after she started leuprolide injections for fibroids. She was being treated with mycophenolate mofetil 1 gm twice a day, belimumab weekly, HCQ 200mg, and prednisone 5 mg daily. She has been on HCQ since her teenage years. The examination was unremarkable except for proximal interphalangeal joint contractures in the right hand and sclerodactyly of bilateral hands, unchanged from baseline. Laboratory findings include urinalysis, which showed 3+ protein, 1+ blood, 6 red blood cells, and 14 white blood cells ruling out thrombotic microangiopathy. C3 was 32 mg/dL, C4 <5 mg/dL, and +dsDNA increased >1000. She was started on captopril and discharged once creatinine and blood pressure was controlled. She was readmitted with hypertension, hyperkalemia, worsening creatinine, nephrotic range proteinuria, complaints of chest pressure, and shortness of breath with pleuritic chest pain. Physical examination and lab findings were unchanged. She was treated with pulse dose methyl prednisone followed by taper and multiple anti-hypertensive agents, including captopril, for presumed lupus nephritis flare versus SRC. Renal biopsy was consistent with SRC and class IV lupus nephritis and was started on cyclophosphamide. While cardiac biopsy showed borderline myocarditis without necrosis and cytoplasmic vacuolization consistent with HCQ cardiomyopathy, hence HCQ was discontinued. Summary: It highlights a rare association of leuprolide causing exacerbation of lupus nephritis or SRC. Although rare, the current case reinforces the importance of close monitoring for HCQ toxicity in patients with renal insufficiency.

Keywords : leuprolide, lupus nephritis, scleroderma, SLE
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