Case Report

Cavitary pulmonary lesion due to systemic lupus erythematosus: An unusual manifestation

Emin Maden[1], Turgut Teke[2], Kursat Uzun[3]

ABSTRACT

Systemic lupus erythematosus (SLE) is an autoimmune disease of unknown pathogenesis. In this abstract we report a 34 years old female SLE case with cavitary pulmonary lesion as the pulmonary manifestation. In literature, SLE with cavitary pulmonary lesion is reported very rarely and thought to be due to infection or pulmonary embolism. Our case had no signs of infection and no finding of pulmonary embolism, the lesion resolved by steroid therapy and without antibiotic administration. In conclusion SLE should be thought in differential diagnosis of cavitary pulmonary lesions.

KEY WORDS: Cavitary pulmonary lesion, Systemic lupus erythematosus.

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INTRODUCTION

Systemic lupus erythematosus (SLE) is an autoimmune disease of unknown pathogenesis characterized at histological examination by deposition of autoantibodies and immune complexes that damage tissues and cells. The pleuropulmonary manifestations of SLE are frequent and sometimes they are the first symptoms of the disease.

SLE may cause a variety of pulmonary disorders such as pleuritis, acute lupus pneumonitis, chronic interstitial lung disease with fibrosis, alveolar hemorrhage, respiratory muscle and diaphragmatic dysfunction, atelectasis, bronchiolitis obliterans, pulmonary vascular disease with pulmonary hypertension, and pulmonary embolism.[1,2] But cavitary pulmonary lesion is rarely seen in SLE. In this article we reported a SLE case whose first sign was a cavitary pulmonary lesion.

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CASE REPORT

A 34 years old female presented to our clinic complaining of nonproductive cough and right sided chest pain that worsened with deep breath of 2 weeks durations. In her past history she had two cesarean section operations 5 years and 2 years ago. Her physical examination was unremarkable, other than erythematous skin lesions on her both arms. Her blood pressure, pulse rate and body temperature were within normal limits. Her blood analysis revealed a slightly increased leukocyte count (11.1 × 109/L), an erythrocyte sedimentation rate of 110/hr, routine biochemical analysis and urine analysis were normal, sputum culture and smear examination for AFB were negative. In her chest radiograph right costovertebral angle was blunted and a cavitary lesion was present at left upper zone which was not present in her chest radiograph obtained one week ago (Figure 1). D-dimer was less than 0.5 and lower extremity Doppler ultrasonography (USG) examination was normal.

Thorax spiral Computed Tomography (CT) showed no pulmonary artery thrombus, but revealed a cavitary lesion at superior segment of left lower

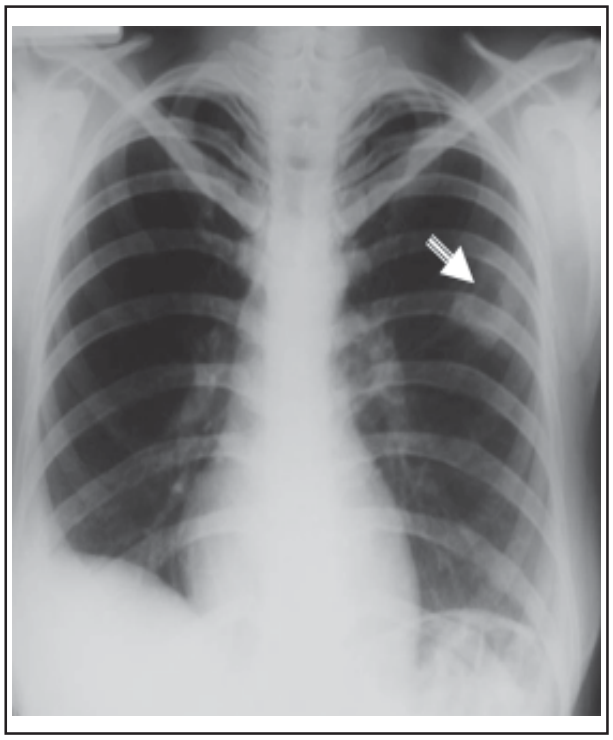

Fig- 1: Chest x-ray demonstrating cavitary lesion at the left middle zone and blunted right costovertebral angle.

lobe and pleural involvement at right side (Figure 2 and 3). Pulmonary embolism was excluded with normal lower extremity Doppler USG, not detecting of thrombus at thorax CT and D dimer < 0.5. Her Rheumatoid Factor (RF), cytoplasmic Anti-neutrophil Cytoplasmic Antibody (c ANCA) and perinuclear ANCA were negative but antinuclear

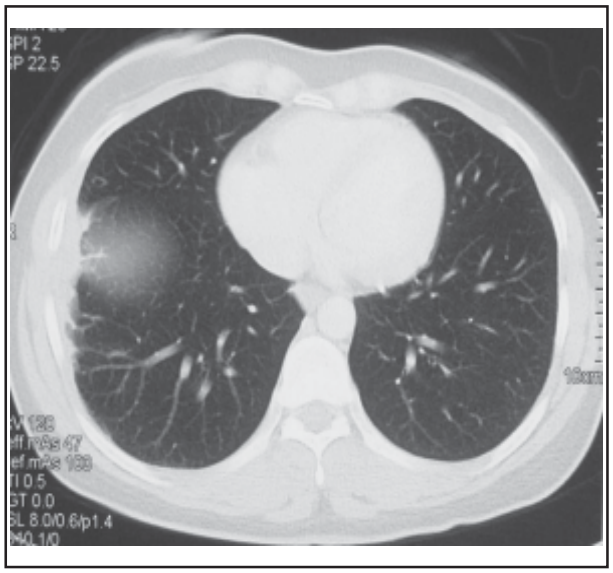

Fig- 3: Thorax spiral CT revealing pleural involvement at right lung.

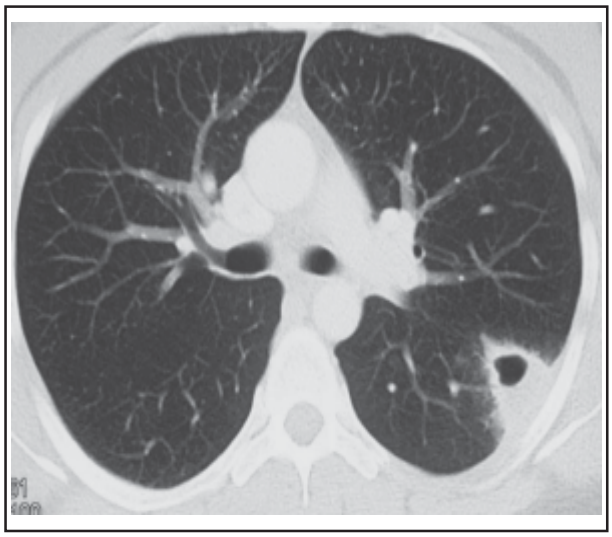

Fig-2: Thorax spiral CT showing a cavitary lesion at superior segment of left lower lobe.

antibody (ANA) and anti double stranded DNA (anti ds DNA) analysis were positive. The direct immunofluorescence examination of skin biopsy obtained from her arm showed immunoglobulin deposition at dermoepidermal junction which was thought to be consistent with pathologic finding of systemic lupus erythematosus.

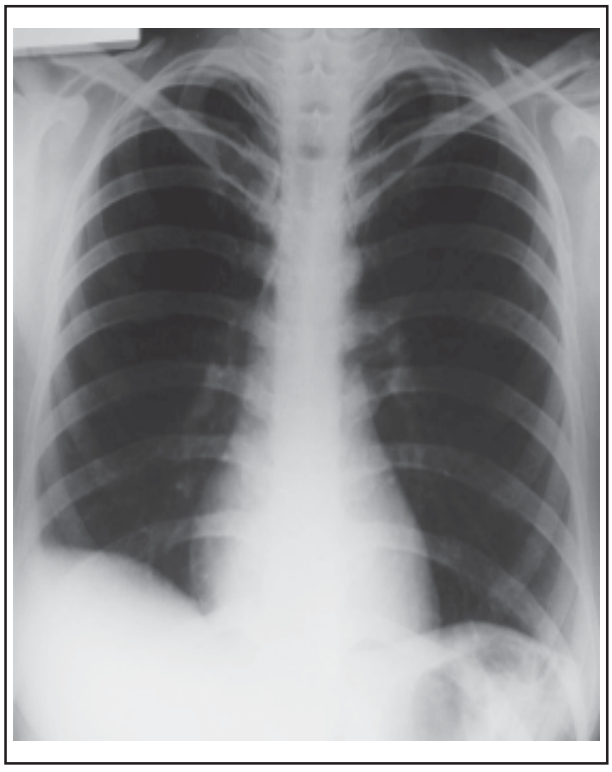

Fig- 4: Chest X-ray of the case after corticosteroid therapy. The lesion almost disappeared.

Due to positive ANA and anti ds DNA together with pleuritis and skin lesions (four of eleven criteria of SLE), she was diagnosed as SLE with cavitary pulmonary involvement. Parenteral methylprednisolone 40 mg was administered to her. In her control radiograph obtained two weeks later, cavitary lesion resolved almost completely (Figure 4). No control thorax CT was obtained due to resolution of lesion on chest X-ray. As the lesion resolved with steroid therapy no other invasive procedure such as bronchoscopy or open lung biopsy was applied to the patient. Her sedimentation rate was also decreased. She has been still followed up on rheumatology clinic and has no complaints.

DISCUSSION

In this case report, we have shown a female patient with SLE having cavitary lung lesion on her chest x ray. SLE is an autoimmune disease characterized by production of various autoantibodies and it can cause alteration in components of the connective tissue of multiple organs including the lung. It may involve the pleura, lung parenchyma, lung vasculature, and respiratory muscles. But cavitary lesion due to SLE is reported very rarely. Only a few reports were present in literature about cavitary pulmonary lesion in SLE.

In the report of Webb WR and Gamsu G[3] five of seven occurrences of cavitary nodules in a series of six patients with systemic lupus erythematosus or mixed connective tissue disease proved to be the result of infection or pulmonary embolism and the causes in the other two cases are unknown. In our case D-dimer was negative, the Doppler USG examination was normal and thorax spiral CT revealed no pulmonary artery thrombus. Also there was no sign of infection. Her lesion resolved with corticosteroid therapy within a few days. Two other cases of systemic lupus erythematosus with cavitary pulmonary nodules as pulmonary manifestation were reported by Castaneda-Zuniga WR et al.[4]

Cavitary pulmonary lesions may develop in SLE cases who are receiving corticosteroid or immunosuppressive therapy. Cavitary lesions in such cases are usually due to bacterial, fungal, tuberculosis or pneumocystis carinii infections or due to septic emboli. Najjar M et al also reported a cavitary lung mass in two SLE cases due to cytomegalovirus.[5]

Cavitary pulmonary lesion is rarely encountered in SLE and may develop without embolism or infection. This case report suggests that SLE should bear in mind in differential diagnosis of cavitary lung lesions.

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