CASE REPORT

SPLENIC CALCIFICATION IN A YOUNG WOMAN WITH UNDIAGNOSED SYSTEMIC LUPUS ERYTHEMATOSUS-A CASE REPORT.

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Abstract

Splenic calcification is not commonly known to be associated to Systemic Lupus Erythematosus (SLE). SLE is an autoimmune multisystem disorder and heterogeneous in presentation. It commonly causes splenomegaly or hyposplenism due to micro infarcts either due to vasculitis or associated with anti-phospholipid antibody (APLA). The association of splenic calcification in SLE has not been widely reported in South East Asia as infective causes are more prevalent. The description of calcification in SLE however is unique and can be differentiated from an infective cause. We describe the case of a 34-year-old female with undiagnosed SLE, normal standard immunological markers, who had diffused splenic calcifications.

Keywords: *Systemic Lupus Erythematosus (SLE), spleen, calcification, immunologic markers*

Case Report

A 34-year-old Indian woman presented with a 3-month history of intermittent fever, loss of weight and appetite, increased hair loss, arthritis, and facial rash. She was previously well and never been diagnosed or treated as connective tissue disorder.

Clinically she was febrile, pale but not jaundiced. There was hyperpigmentation over her pinna and oral ulcers. Her abdomen was soft and mildly tender over the epigastric region. There was no hepatomegaly but Traube's space was dull on percussion. There was no palpable lymphadenopathy.

An ultrasonography of the right upper quadrant revealed borderline splenomegaly with multiple splenic calcifications. The diffuse splenic calcification was confirmed on computed tomography scan of the abdomen and pelvis with no other abnormality found. (Figure 1)

Immunological and serological markers (Anti-nuclear antibody (ANA), Extractable nuclear antibodies (ENA), virology screening (HIV, hepatitis B and hepatitis C)) were negative. The white cell count was relatively low (3.6 x 109/L, N: 0 – 11x 109/L), marginally low lymphocyte (0.78 x 109/L, N: 0.8 – 4.95) low hemoglobin (6.1 g/dL) and normal platelet count (249 x 109/L). Her erythrocyte sedimentation rate (ESR) was 64 mm/1 hour. Both complement levels were low (C3: 0.18 G/L N: 0.9-1.8G/L; C4: 0.04G/L, N: 0.1-0.4 G/L). The direct anti-human globulin test was positive. Blood for fungal culture, serology for brucellosis and tuberculosis screening (chest radiograph, Monteux test, sputum for acid fast bacilli and culture) were all negative.

Diagnosis of undifferentiated connective tissue disease (UCTD) with possible SLE was made based on symptoms and hypocomplementemia. She was given a course of prednisolone at 1mg/kg/day and hydroxychloroquine but to no avail. She was then pulsed with intravenous (IV) methylprednisolone 500 mg daily for three days with good progress and was discharged well with hydroxychloroquine and prednisolone.

Unfortunately, she had defaulted her medication and follow up until a year later when she presented with pyrexia of unknown origin. She was treated for fungal infection in view of splenic calcifications with itraconazole for almost 9 months. However, her general health deteriorated. The immune markers except for complement levels were still normal.

The ESR was higher than before (102 mm/1hr), with C-reactive protein (CRP) of 119.6 mg/L (normal < 0.5 mg/L). Her repeated chest radiograph was normal. Echocardiography showed global pericardial effusion with no evidence of right ventricle collapse or vegetation. Her urine specimen showed presence of red blood cells and protein with low serum albumin 26 G/L (N: 35-52). She was given a trial of anti-TB treatment initially and broad-spectrum antibiotic. The fever was not abating. Subsequent repeated ANA was positive at <1:40, with nucleolar pattern.

Diagnosis of SLE was made in accordance with the SLICC Criteria: 4 (Clinical: Serositis, Immunology: ANA, low complements, positive Direct Coomb's). She was given IV methylprednisolone 500mg daily for three days and hydroxychloroquine was restarted with marked improvement clinically. In spite of the improvement, her 24-hour urinary protein was >2g/dL and renal biopsy showed class IV lupus nephritis according to ISN/RPS classification for lupus nephritis.(5) The glomerular filtration rate (GFR) was 104 ml/min/1.73m2 (N: > 90). She was given IV cyclophosphamide monthly for 6 months uneventfully and continued with prednisolone, and hydroxychloroquine.

Discussion

SLE is an autoimmune, disease with multisystem involvement. In the past, the American College of Rheumatology (ACR) SLE criteria were used to guide diagnosis[1]. The ACR criteria, is specific but not too sensitive however. Hence, many patients with SLE were picked up 2 to 3 years later. Systemic Lupus International Collaboration Clinic (SLICC) Criteria was introduced in 2012, to aid the diagnosis of SLE to be made earlier[2]. Patient's ethnicity, access to care, compliance, or socioeconomic and demographic factors, and age of onset contributed to the late diagnosis and adverse impact disease outcome as extensively described in LUMINA cohort study[3].

The spleen can be affected in SLE in the form of splenomegaly, hyposplenism due to micro-infarcts and spontaneous rupture of the spleen[4, 5]. There were not many case reports pertaining to splenic calcification in SLE patients. Splenic calcification is more common in rheumatoid arthritis, systemic sclerosis, tuberculosis infection, sickle cell and B cell lymphoma[6, 7].

Splenic calcification was first reported at autopsy in a patient with lupus nephritis and milliary tuberculosis[8]. This therefore made it difficult to associate the splenic calcification to SLE alone.

Tieng AT et al, reported that the susceptibility to infection is not increased in patients with extensive splenic calcifications. The calcification of the spleen was found to be unique to SLE i.e. discrete, rounded and larger than punctate calcification seen with granulomatous infection[4].

Our case was unusual since she had symptoms suggestive of CTD with negative immunological markers except for low complement. The ultrasonography and CT scan of the abdomen revealed a very dense and diffuse calcification of the spleen with distinctive features and much denser compared to that as described in previous reports. The diagnosis of SLE could have been made earlier if this novel association of splenic calcification was to be incorporated into the SLICC clinical criteria.

Previous literature revealed that most patients with splenic calcification and low complement, also had lupus nephritis[4]. Our patient was found to have proteinuria and renal biopsy showed lupus nephritis class IV. She was then treated with monthly IV cyclophosphamide and to date patient is well.

Our case illustrates the intricacy of making a diagnosis of SLE at the right time to prevent further deterioration based on standard SLICC criteria. The characteristics of the splenic calcification described were also taken into consideration. On the other hand, it is essential to exclude infective cause especially when tuberculosis is endemic in this region. What caused the splenic calcification over time in SLE patients remains unclear. A plausible explanation is chronic inflammation of arterial vessels, leading to micro-calcification[9]. The distinctive features of the splenic calcification may provide an important diagnostic clue for SLE especially in patients without profound SLE manifestations clinically or serologically.

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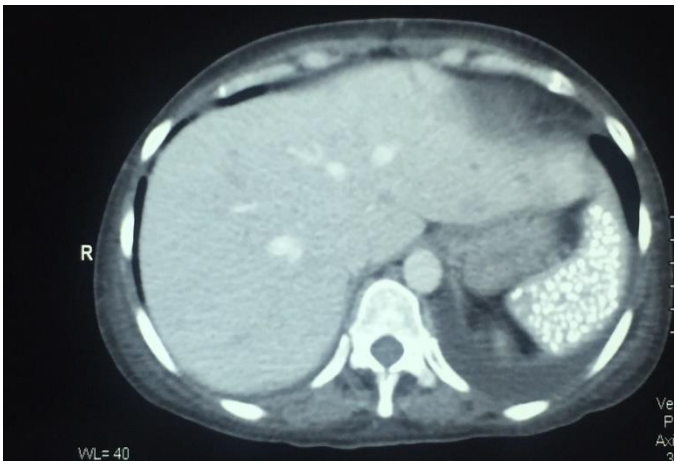

Figure 1. Computed tomography scan section of the abdomen showing diffuse calcification of the spleen

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