

## Case report

# Variable Clinical Presentations of Systemic Lupus Erythematosus in Three Sudanese Girls: Report of Cases and Review of the Literature

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### SUMMARY

Systemic lupus erythematosus (SLE) is a chronic inflammatory disease of unknown aetiology. It is a multisystem disease characterized by spontaneous remissions and relapses. Certain organs are affected more commonly than others. Some patients have very mild disease, whereas others present with serious, life-threatening complications. In this report 3 adolescent girls presented with variable manifestations of SLE to Wad Medani Children Teaching Hospital.

ملخص الحالة: الذئبة الحمامية المجموعية هي متلازمة غير معروفة السبب. مظاهرها السريرية تتميز بالتهاب مزمن وخلل مناعي. تتميز الصورة السريرية بمراحل هدأة و انتكاسة. هذا التقرير يعرض لحالات مختلفة لهذا المرض مستعرضا القصة المرضية والمظاهر السريرية للمرض. يؤكد التقرير اختلاف المظاهر السريرية وخطورة بعض المضاعفات المصاحبة.

**Key words:** Systemic lupus erythematosus, manifestations, complications, prognosis, Sudanese Adolescent girls

Systemic lupus erythematosus is an autoimmune disease with female predominance. The pathophysiology is not well defined. Many genes affecting immune function, particularly the human leukocyte antigen (HLA), may be incriminated. Environmental e.g., sun exposure can worsen SLE rashes and may trigger a flare of the entire disease through deposition of immune complexes, cytokines, chemical neuro-modulators or by direct attack by auto-antibodies and activated leukocytes. SLE like disorder precipitated by certain drugs such as phenytoin, toxins and diets differs from classic SLE in its autoantibody profile (e.g., antihistone antibody positive) and in sparing the kidneys and central nervous system. The present outlook is much better because of awareness and more accurate laboratory tests leading to earlier diagnosis and effective and safer medications.

### CASE REPORT:

### CASE ONE:

A 16-year-old girl presented with an 18 months of exacerbation and remission of generalized fatigability and history of severe arthritis of small and large joints, without morning stiffness or fever. There was no skin rash or oral ulceration. (Fig. 1) She lost much of her weight. Last time she was readmitted suffering from dypnoea, lower chest stabbing pain and generalized fatigability, throbbing frontal headache fever, vomiting and blurring of vision. In the ward she developed repeated complex generalized status tonic clonic seizures and lost her consciousness.

Clinically she was very ill, comatose [GCS 7] severely wasted and pale. Blood pressure was 137/89/. There CNS examination showed no lateralizing sign or evidence of cranial nerves involvement. Examination of all small and large joints revealed no abnormality. No skin rash, or hypo and hyper pigmentation.

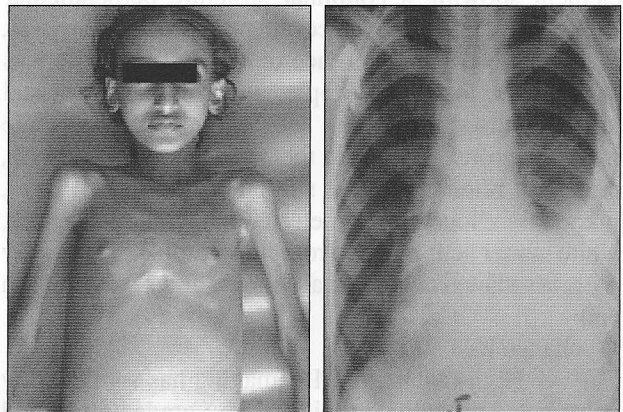


Fig.1 (Case 1)

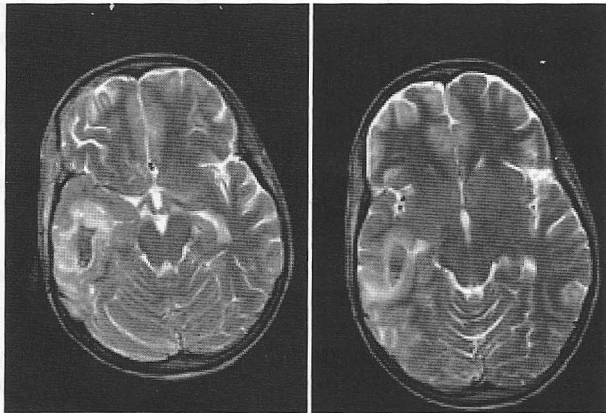
Fig. 2

Fig 1: Case one, severely wasted girl with delayed puberty.

Fig 2: AP Chest X-ray film showing pleural effusion.

Laboratory investigations were as follow; RBG:

68 mg/dl, negative BFFM negative. Complete blood cell count showed Leucopenia, thrombocytopenia and evidence of anemia of chronic disease treated by blood transfusion. Blood urea was 119 mg/dl, with serum creatinine of 2.6 mg/dl. Serum Na<sup>+</sup> and K<sup>+</sup> were 135meq/l and 3.8 meq/l respectively. Serum anti-phospholipid; 15.5 u/ml (N<10 u/ml), serum anti double stranded DNA was very high; 526u/ml (N<117u/ml), serum ANA; 0.7 (positive >1.2) and anti-smooth muscle antibodies; 2.9 (positive >15).



**Figs: 3 & 4. An irregular right temporal lobe lesion (arrows) of high signal intensity in T1 and low in T2 non-enhancing and surrounded by edema.**

Chest X-ray showed left chest pleural effusion (Fig 2) whereas abdominal U/S showed enlarged liver with normal texture, moderate ascites and normal size kidneys with increase echogenicity and loss of cortico-medullary differentiation. There were small irregular right temporal lobe lesions of high signal intensity in T1 and low in T2 non-enhancing in brain MRI, surrounded by oedema. There was extension of haemorrhage into the right parietal and frontal lobes, without midline shift or abnormalities. (Figs 3 & 4) These features were consistent with haemorrhagic infarction suggestive mainly of vasculitis.

This girl was managed with prednisolone and chloroquine tablets. She regained consciousness fully after 2 days without neurological sequelae. Follow up showed persistent high BP and the renal profile didn't improve. Renal biopsy of the left lower renal pole revealed features of overlapping of class V & VI lupus nephritis. She was started on methyl prednisolone, cyclo-phosphamide nifedipine and enalapril.

#### **CASE 2 and 3**

Two other girls aged 13 and 15 years, presented to our unit with variable clinical manifestations and

course of the disease as compared to the previous case. However, they manifested the characteristic pattern of exacerbations and remissions. Their constitutional symptoms include; low-grade fever, fatigue, malaise, anorexia, nausea, and weight loss. Arthralgia in both cases was the initial complaint. Unlike case 1, case 2 and 3 presented with a malar and butterfly rash over the cheeks and bridge of the nose. (Figs 5 & 6) Case 2 had painless ulcers in the nose and mouth. There were no neurologic symptoms apart from mild cognitive defects which resolved following the initiation of treatment. Psychosis was prominent in both cases and unaffected after steroid cessation. Both patients had abdominal pain, diarrhea and vomiting. There was no dyspnea, cough, fever and pleuritic pain. There was no important cardiopulmonary, neurological or renal involvement. Both patients denied any history of medications known to precipitate SLE like illness.

Laboratory investigations didn't show evidence of renal or haematological disorders. Serum anti-phospholipid was normal and serum anti double stranded DNA was high; 305 in case 2 and 452u/ml in case 3 (N<117u/ml), Serum ANA and Anti-smooth muscle antibodies were positive (>15) in both cases.



**Case 2**

**Case 3**

**Figs 5 & 6- Malar, butterfly and discoid rash in case 2 and 3**

#### **DISCUSSION:**

As with most autoimmune disorders, SLE shows a strong female predominance, with a ratio of approximately 4:1 occurs before puberty and a ratio of 8:1 after puberty. The prevalence of SLE is higher among Asians, African Americans and it is infrequently seen in blacks Africans. No data was reported from Sudan. Our cases were three pubertal girls.

Lupus is a multisystem disease. The American College of Rheumatology has designated 11 criteria for classification. The diagnosis of SLE is made if four or more of the following manifestations are present, either serially or simultaneously malar rash, discoid rash, photosensitivity, oral ulcers, arthritis, serositis, renal

disorder, neurologic disorder, haematologic disorders, immunologic disorder and antinuclear antibody (specificity, 95%; sensitivity, 75%).<sup>6</sup> The 3 cases in this report fulfilled these criteria but with different presentations.

Gastrointestinal manifestations which may signify vasculitis of the intestine were reported in these three cases. Symmetric, non-erosive and usually non-deforming arthritis which usually involve the small joints is a frequent presenting symptom.<sup>7</sup> Avascular necrosis and septic arthritis should be considered. The 3 cases had joint involvement that was more severe in case I.

Unlike case II and II in our series, case I with high serum anti double stranded DNA and anti-phospholipid antibodies presented aggressively with stroke, seizures and coma, without rash as compared to the other cases. Acute or subacute organic encephalopathies with affective disturbances or psychosis and neuropathies are the most common neurologic disorders encountered in lupus. Incidence of stroke is high in the first 5 years of disease. Patients with anti-phospholipid antibodies are at higher risk for such events.<sup>6</sup> Abnormal CSF with elevated white cells, protein and immunoglobulin G reflects increased CNS lupus activity. CSF anti-neuronal nuclear antibodies (ANNA) have some value in confirming CNS disease, but are less specific or sensitive than a serum test.<sup>8</sup> Seizures occur in 15-20% of patients due to cerebral vasculitis or associated metabolic derangements were present only in case I.

Renal manifestations may not be apparent until advanced nephrotic syndrome or renal failure is present.<sup>9</sup> Case I only presented with end stage renal failure.

Atherosclerosis is an independent risk factor for cardiovascular disease and heart involvement with systolic murmurs is common presentation and reported in up to 70% of cases associated with antiphospholipid antibodies.<sup>10</sup> In our cases there was no evidence of heart involvement. Pneumonia pleural effusion and haemoptysis are common manifestations of lupus and case I presented with pleural effusion (Fig. 2)

The diagnosis of lupus is clinical and laboratory tests provide only a part of the picture. ANA test is considered to be 100% sensitive for diagnosis but a positive ANA alone is not sufficient for the diagnosis. Double-stranded DNA (dsDNA antibody) is the confirmatory test. Serum antiribosomal P antibody is positive in 60% of cases of lupus psychosis and anti-phospholipid antibodies, including the anticardiolipin antibody (ACLA) may be positive in hypercoagulable states, myelopathy and SLE. Prolongation of the activated partial thromboplastin time (aPTT) only identifies 30% of circulating anticoagulants. Complement studies (C3, C4, CH50) may be useful to determine disease activity in SLE. 8

Because subtle ischemia or cerebritis MRI is favoured over CT scans. The most common findings are ischemic zones that may correspond to cortical or subcortical infarcts. (Fig 3&4)

The overall, prognosis for SLE patients has improved dramatically in recent decades with 70% now living 10 years after diagnosis. Neurologic complications worsen prognosis, especially in the presence of refractory seizures, encephalopathy, or paralysis from stroke or myelopathy.<sup>10</sup> These cases which came in cluster over a very short period indicated that SLE may prevalent in Sudanese patients and also testified the correlation between disease severity and autoantibodies levels.

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