Brit. J. Psychiat. (1976), 128, 442–5

Psychiatric Problems in Systemic Lupus Erythematosus

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Summary. Four patients with systemic lupus erythematosus (SLE) are described in whom there were major psychiatric complications. Two of these patients had cerebral lupus with psychiatric manifestations of the disease together with other features of disease activity and responding to treatment with high dose steroids. The first of these had had a ten-year history of recurrent episodes of depression before other features of the disease became evident; in the second patient recurrent psychotic episodes occurred after the onset of typical multi-system disease. The third patient had had a minor cerebro-vascular accident four years before other features of SLE became manifest, and cerebral deterioration later on in her life was probably due to hypertensive cerebro-vascular disease secondary to the renal disease of SLE. The fourth patient, a young man, had had recurrent episodes of depression and aggressive behaviour for several years and committed suicide at the age of 33.

Cerebral involvement in systemic lupus erythematosus (SLE) is now known to be an important feature of the disease (*British Medical Journal*, 1975; Bennett *et al*, 1972; Estes and Christian, 1971; Cheatum *et al*, 1973). Cerebral complications of the condition are second only to renal complications as a cause of disease mortality (Estes and Christian, 1971) and have been reported as preceding other features of the disease by several years (Bennett *et al*, 1972). We report here four cases in which psychiatric features played a significant part in the patient's illness; two of these histories are distinguished by the duration of mental symptoms (10 years and 5 years respectively) before the onset of other features of the illness. These four histories illustrate some of the psychiatric problems that may arise in SLE either as a direct result of cerebral lupus or indirectly secondary to hypertension induced by lupus nephropathy.

Case Reports

Case 1

Miss L.M., a 47-year-old district nurse, was admitted complaining of inability to cope with her work, impairment of memory and depression of mood. She had experienced several such episodes in the past, the worst being nine years previously when she required admission and was treated with imipramine and perphenazine. While in the ward she developed a punctate erythematous rash and polyarthritis. She complained increasingly of poor concentration and was observed to have difficulty in knitting. She became disorientated in time and place, her talk was increasingly circumstantial and her affect was labile. She became pyrexial and was found to have a right-sided pleural effusion. She was transferred to a medical ward for further investigation. Further symptoms now appeared: she now showed slurring of speech, a tic of the cervical muscles and involuntary movements of the left hand.

Investigation results included: haemoglobin 10·1 g per cent, ESR33 mm fall in the first hour, white blood cell count 3,800/mm^3, rheumatoid factor, anti-mitochondrial and smooth muscle antibodies negative, anti-nuclear factor positive at 1 : 1,000 homogeneous pattern, DNA-binding activity raised at 49 per cent, B-1-C globulin 62 mg/100 ml (normal 120–168 mg/100 ml), creatinine clearance 89 ml/min, urea and electrolytes normal, white and red cells present in the urine sediment and proteinuria, cerebro-spinal fluid protein raised at 70 mg/100 ml, EEG no definite abnormality, brain scan normal; renal biopsy showed focal glomerulonephritis. Active SLE with cerebral and renal involvement was diagnosed, and she was treated with prednisolone 50 mg

daily. In the next month her mental condition improved in parallel with a fall in her DNA-binding activity, and the prednisolone dosage was slowly reduced. Her general condition remained well until prednisolone dosage had been reduced to 28 mg daily, when she had a relapse of her depression and DNA-binding activity was subsequently found to have risen. She was re-established on a higher dose of prednisolone and the depression again improved.

She was well enough to be discharged from hospital two months later. Over the past ten months since discharge she has remained fairly well on a slowly reducing dose of prednisolone.

Case 2

Mrs A.C., a 31-year-old housewife, at the age of 28 years complained of lassitude and developed a generalized polyarthritis which was initially diagnosed and treated as rheumatoid arthritis elsewhere. One month after the onset of her illness she suddenly became worse, with more joint pain, confusion, pyrexia and the onset of cardiac failure. On admission to hospital she was ill and confused, in congestive cardiac failure; there was T wave inversion of the lateral chest leads of the ECG, and raised serum aspartate transaminase (SGOT) at 87 units/litre, and alanine transaminase (SGPT) at 720 units/litre were found, suggesting myocarditis. Chest X-ray showed consolidation of the right lower lobe. Blood urea level was raised at 98 mg/100 ml and 1·8 g protein were excreted in a 24-hour urine collection. She was treated with diuretics and 100 mg of prednisolone daily and generally improved over the next ten days. Steroid reduction in 10 mg steps was started and she remained well until dosage was reduced to 60 mg per day. At this stage she became extremely depressed and withdrawn, and later acutely psychotic with disorientation, confusion, auditory hallucinations and delusions; she believed her heart was to be excised. She was at this stage treated with chlorpromazine 50 mg thrice daily and maintenance of the 60 mg of prednisolone per day, and improved over the course of a fortnight. Steroid dosage was further reduced to a lower maintenance dose, and the patient was allowed home. Since this first psychotic episode the patient has had three further episodes of paranoid psychosis in association with other evidence of disease activity, including myocarditis, pneumonitis and renal involvement, but in the absence of significant hypertension, uraemia or electrolytes imbalance and each time she improved with high dose prednisolone. The last two episodes have occurred in the last twelve months and DNA-binding activity during both has been very high at over 90 per cent on both occasions with a low C3 complement level at the earlier one at 55 mg/100 ml. In one of these the psychosis occurred very soon after reduction in the dosage of prednisolone. However, it is noteworthy that DNA-binding activity has been over 90 per cent even during those periods in the past year when the patient was perfectly well clinically, and in this patient may not be a good indicator of disease activity. At present the patient is mentally well on a daily steroid dosage of 40 mg of prednisolone.

Case 3

Mrs C.W. first presented at 35 years of age with a hemiparesis. She was found to be hypertensive, and anti-hypertensive medication was started. She made a good recovery, but two years later her pregnancy was terminated because of hypertension and she was noted to have a polyarthritis of four years duration. She developed vaginal bleeding after her hysterectomy, and was found to have splenomegaly, thrombocytopenia and anaemia, a positive Coomb's test, and positive ANF. Le cells were not detected. A presumptive diagnosis of SLE was made and treatment was started with prednisolone, 60 mg daily. Her hypertension proved difficult to control and she was readmitted eighteen months later. Her stay in hospital was abbreviated by her extreme anxiety, but she required almost immediate readmission because of severe headache and vertigo. An EEG at this time showed bitemporal abnormalities which lacked diagnostic specificity. The diagnosis of SLE was confirmed at this stage by renal biopsy, which showed changes of glomerulonephritis with concurrent infective changes. She continued to be admitted from time to time over the next two years, complaining of headache and vomiting, and showing hallucinations and increasing confusion.

Hospital admission at the age of 42 years was because of memory impairment, poor concentration, headache, and ataxia. She was depressed and showed vague non-systematized persecutory delusions, with illusions and hallucinations. She was disorientated in all dimensions, restless and confused. Blood pressure was 210/120 mm of mercury and blood urea varied around 50 mg/100 ml. An EEG showed widespread gross abnormalities. She did not improve and died a month after admission. Post mortem examination was not carried out.

Case 4

Mr D.M., a male nurse, had problems of personality which first became evidence in adolescence. Later, from the age of 24, he had repeated bouts of depression which continued to recur until his death from a paracetamol overdose nine years later. Over the first three years he was admitted on several

occasions to different hospitals for psychiatric in-patient treatment; his symptoms included aggressiveness and paranoid ideas, with marked fluctuation of mood; on one occasion he attempted suicide. At the age of 27 years he developed pleurisy and thrombocytopenic purpura, with a positive antinuclear factor. SLE was diagnosed and prednisolone therapy was commenced which he continued in low dosage (around 10–15 mg daily) as an out-patient. One year after SLE had been diagnosed he had an episode of headache, vomiting and photophobia and was admitted to another hospital. Cerebro-spinal fluid examination showed 10–15 lymphocytes per high power field with 75 mg/100 ml of protein, and aseptic meningitis was diagnosed. No viruses were isolated from the CSF, and corticosteroid dosage was continued unchanged. Following his recovery from this episode he was reasonably well until a similar episode three years later. Eleven days after discharge from hospital at the end of this episode he was admitted to yet another hospital deeply unconscious after an overdose of diazepam tablets. He had been taking prednisolone 15 mg daily prior to this overdose. On recovery he was extremely depressed and became aggressive and violent towards the hospital staff. He was transferred to a psychiatric hospital, but after one week insisted on discharge. Nine days later he suffered a sudden onset of vertigo and remembered nothing subsequently for 24 hours. Nothing abnormal was found on examination in hospital, and he again took his own discharge on recovering, but one week later he was readmitted after sudden onset of 'pleuritic' chest pain; ECG showed changes of pericarditis. He admitted to depression and suicidal thoughts but four days later again insisted on leaving hospital. He was much concerned at this time about the diagnosis of SLE; he had been informed of this at the hospital where the illness was first diagnosed and was convinced that he had only a few years to live. Ten days later he died in another city after a self-administered paracetamol overdose. Post mortem examination was not carried out.

Discussion

These cases illustrate some of the psychiatric problems which may be associated with SLE and its diagnosis. The first two patients had definite cerebral lupus with mental symptoms, together with other features of disease activity. The first was successfully treated with high-dose steroids, and DNA-binding activity fell with the response to therapy. Her case is unusual in the duration of the psychiatric illness before other features of the disease became manifest, and it could be argued that her earlier mental symptoms occurring before the onset of multi-system disease were unrelated to SLE, although this seems the less likely possibility.

The second patient has had severe multi-system lupus with several psychotic episodes, occurring in association with renal disease, myocarditis and pneumonitis. Her psychotic illnesses have responded to high dose steroid therapy, but mental improvement has not been reflected in a fall in DNA binding activity. One psychotic episode occurred when she was taking 60 mg of prednisolone daily. It was thought at the time that this might be steroid-induced; however, subsequent psychotic episodes have occurred while she has been on lower doses of steroids and have improved on increasing the steroid dosage, and this, occurring in association with improvement of other features of disease activity, makes a diagnosis of steroid psychosis unlikely.

The third case illustrates another more obvious mechanism of cerebral involvement in SLE, namely via hypertension secondary to renal involvement. The early presentation of the disease with hypertension and a cerebro-vascular accident in a young female supports this diagnosis.

The last case presents a complex problem. Several alternatives are possible:

(a) The patient's personality disorder was unrelated to his SLE, and his death from drug overdose an impulsive action resulting from his inability to cope with his many problems (marital, financial, and his illness, which he knew to be a fatal one).

(b) His personality disorder was an early manifestation of his SLE. This hypothesis is unlikely and untestable.

(c) He had cerebral lupus, which resulted in a severe endogenous depression, and this, in combination with his personality disorder, lead to his suicide.

We view the third of these to be the most likely. Following the diagnosis of SLE he was treated with low doses of steroids and then his care appears to have been shared between many hospitals. He was obviously a difficult patient to treat. Our assumption that his continued mental symptoms were due to SLE must remain un-

proved as we can find no positive serological tests resulting from his admissions to various hospitals in the few years before his suicide. However, the fact that he had developed multi-system features of his illness, with pleurisy, thrombocytopenia and a positive anti-nuclear factor and that just before his death he had evidence of pericarditis would all support this assumption. Certainly this young man's tragic case must make us beware of labelling difficult psychiatric patients as psychopathic personalities without remembering that there may be a potentially treatable cause for their illness. It is noteworthy that Von Brauchitsch (1972) found 29 of 140 randomly selected patients admitted to a psychiatric service to have positive anti-nuclear factors. More recently Johnstone and Whaley (7519), in addition to finding the incidence ofpositive anti-nuclear factor to be higher in 100 psychiatric patients than in controls, have found a positive anti-nuclear factor to be more common in their psychotic than in non-psychotic patients, although in their study this tendency may have related to lithium therapy. Accepting the difficulties of studies such as this, we wonder if taking a closer look at patients in other psychiatric institutions might reveal previously undiagnosed and potentially treatable cases of SLE, and we hope to do this in the near future.

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(*Received 25 July 1975*)