Neuropsychiatric Lupus: The Devil is in the Detail

Sir,

Details of patient history remain important in spite of all technological advancements. Nonneurological symptoms and signs may point to the etiologic diagnosis and should be considered carefully. While diagnostic criteria are helpful, patients' diseases may sometimes be in a state of evolution and incomplete syndromes also have to be recognized. A nonspecific symptom such as psychosis sometimes gets treated symptomatically without further thought. This may be a missed opportunity to diagnose and provide specific treatment if indicated or at least caution for future events. We present a 44-year-old lady who initially presented with psychosis and later developed an acute polyradiculoneuropathy. She was subsequently found to have probable systemic lupus erythematosus (SLE).

A 44-year-old lady presented with calf pain, paresthesias, and difficulty in getting up from squatting, followed soon by difficulty in climbing upstairs of 2-week duration. Four days later, she developed left facial weakness. On the 10th day, she had limb weakness, which progressed enough to confine her to bed. She had bilateral facial weakness, flaccid areflexic quadriparesis, and an impaired joint position sensation in the right big toe. Her upper limbs were normal with normal bladder and bowel. There was no altered behavior or seizures, upper respiratory tract infection, diarrheal illness, abdominal pain, or cola-colored urine. There were no rashes, photosensitivity, joint pains, or alopecia. A syndromic diagnosis of polyradiculoneuropathy involving the facial nerve as well as spinal nerve roots was made.

Six years ago, she had paranoid delusions, feeling of being watched through a camera with auditory hallucinations which responded to paliperidone that had been continued till date. Three years ago, she was diagnosed with ductal carcinoma of the left breast that was positive for estrogen and progesterone receptors. She was managed with neoadjuvant chemotherapy with docetaxel and epirubicin followed by surgery and chemoradiotherapy.

At presentation, nerve conductions demonstrated a sensorimotor axonal neuropathy in all four limbs. Since the patient had a past history of malignancy, magnetic resonance imaging (MRI) was done to look for carcinomatous infiltration of nerve roots which revealed enhancement along the roots. Cerebrospinal fluid was acellular with raised protein and no malignant cells. Peripheral smear also did not reveal any

atypical or leukematous cells. Whole-body positron emission tomography (PET)-computed tomography did not show evidence of disease recurrence.

Keeping in mind her past history of psychosis, a differential diagnosis of porphyria and lupus were also considered. Urine porphyrin was negative whereas antinuclear antibody (ANA) was positive. Extractable nuclear antigen profile revealed anti-Sm, SS-A, and SS-B antibodies. Negative antihistone antibody ruled out drug-induced lupus. Urine analysis showed mild proteinuria (300 mg/24 h). She did not have sicca symptoms such as dryness of mouth and grittiness of eyes. Schirmer's test was done after her facial palsy resolved and was normal [Table 1]. Pleural thickening on PET and ultrasonography chest could have been due to past radiotherapy or pleuritis related to lupus. Table 1 shows her investigation profile in which other systemic involvement of lupus was evaluated.

On the day of presentation, she was started on intravenous immunoglobulin (IVIg); 125 g was administered over 5 days. While IVIg was being given, and for a week after, it was completed, she continued to worsen. New weakness appeared in the upper limbs. IV methyl prednisolone followed by oral prednisolone was given, and 3 days later, some improvement was noted.

She received monthly cyclophosphamide pulses for 6 months followed by azathioprine 125 mg/day. There were no further relapses and she improved completely.

Peripheral nervous system involvement in lupus is rare. Acute polyradiculoneuropathy has been anecdotally reported in SLE.[1-5] In a cohort of 523 SLE patients, only 1.1% had a Guillain–Barre syndrome-like presentation. Our patient had psychosis in the past. Her magnetic resonance imaging (MRI) brain was normal although neuropsychiatric lupus patients with antibody positivity usually have an abnormal neuroimaging.[6] The patient had ANA, anti-Sm, anti-SS-A, and anti-SS-B positivity. According to the 2015 ACR classification, 4 out of 17 criteria are necessary for a definite diagnosis of SLE. This patient had probable SLE with three criteria: neuropsychiatric manifestations, ANA and anti Sm antibody positivity. She may develop new manifestations over time, or it could be a chance association of the occurrence of multiple diseases such as psychosis, carcinoma of the breast, and acute polyneuropathy. However, the former was likely as antiganglioside antibody panel was negative as well as SLE was a unifying diagnosis, which could explain all her symptoms.

Neuropsychiatric lupus may present with normal MRI brain, and peripheral nervous system involvement can rarely occur in lupus. Paying attention to details can enable early diagnosis and improve outcome by early immunomodulation.

Table 1: Investigations and results

Investigations for localization	Result
Nerve conduction study	Bilateral sensorimotor polyneuropathy AMSAN
MRI brain MRI Spine	Normal: Enhancement along conus and nerve rootlets
Investigations for etiologic diagnosis	
Hemogram	Hb 11.36 TLC 5210 Plt 201510 ESR 20 mm; no atypical cells on peripheral smear
Liver/renal functions	U/Cr 31/0.6 Na/K 135/5.5 T.Bil 0.2 SGOT/SGPT 51/46 ALP 71 Alb/Glo 3.3/5 Ca/PO4 8.7/3.4
Chest radiograph	Bilateral reticulonodular shadows
Thyroid profile	T3/T4/TSH normal
CSF	Acellular, protein 166 mg/dL sugar 71 mg/dL, RBS 104 mg/dL; Gram staining, cryptococcal antigen, GeneXpert negative; malignant cytology no evidence of cancer
Serum ACE	38 U/L (<65)
Viral markers	HIV, HBsAg, anti-HCV negative
RF, ANCA	Negative
Extractable nuclear antigen profile	
ANA 1: 640	Positive
Anti-dsDNA	Negative
Anti-Sm antibody	Positive
U1 Sm/RNP negative	Negative
SS-A strong positive +++	Strong positive +++
Ro 52 strong positive +++	Strong positive +++
SS-B positive +	Positive +
Anti-histone, anti-centromere, anti-SCL-70 IgG, PM-Scl	Negative
Anti Jo-1	Negative
PCNA, nucleosome, AMA-M2 antibodies, ribosomal P antibodies	Negative
Antiganglioside antibody panel (IgG, IgM)	Negative
Urine active sediments	Negative
Urine porphyrin screening	Negative
Schirmer's test	15 mm (>5 mm normal)
USG chest	No pleural effusion on either side, bilateral CP angles clear
PET-CT	No abnormal uptake

Ethical clearance: Not required, Patient consent: Obtained.
MRI=Magnetic resonance imaging, AMSAN=Acute motor and sensory axonal neuropathy, CSF=Cerebrospinal fluid, ALP=Alkaline phosphatase, TSH=Thyroid-stimulating hormone, ANCA=Antineutrophil cytoplasmic antibodies, RF=Rheumatoid factor, ACE=Angiotensin-converting enzyme, PCNA=Proliferating cell nuclear antigen, PET=Positron emission tomography, CT=Computed tomography, Hb=Hemoglobin, HCV=Hepatitis C virus

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Arunmozhimaran Elavarasi, Mamta B. Singh, Padma Srivastava, Vinay Goyal

Department of Neurology, All India Institute of Medical Sciences, New Delhi, India

Address for correspondence: Dr. Mamta B. Singh, Department of Neurology, All India Institute of Medical Sciences, New Delhi - 110 029, India.
E-mail: mbsneuro@gmail.com

References

1. Chaudhuri KR, Taylor IK, Niven RM, Abbott RJ. A case of systemic lupus erythematosus presenting as Guillain-Barré syndrome. Br J Rheumatol 1989;28:440-2.
2. Aït Benhaddou E, Birouk N, El Alaoui-Faris M, Mzalek-Tazi Z, Aïdi S, Belaïdi H, *et al.* Acute Guillain-Barré-like polyradiculoneuritis revealing acute systemic lupus erythematosus: Two case studies and review of the literature. Rev Neurol (Paris) 2003;159:300-6.
3. Hsu TY, Wang SH, Kuo CF, Chiu TF, Chang YC. Acute inflammatory demyelinating polyneuropathy as the initial presentation of lupus. Am J Emerg Med 2009;27:900.e3-5.
4. Hantson P, Kevers L, Fabien N, Van Den Bergh P. Acute-onset chronic inflammatory demyelinating polyneuropathy with cranial nerve involvement, dysautonomia, respiratory failure, and autoantibodies. Muscle Nerve 2010;41:423-6.
5. Fazio RM, Chen I, Somal N. Guillain-Barré syndrome as first presentation of systemic lupus erythematosus: A rare manifestation complicated by IVIg-induced splenic infarct. BMJ Case Rep 2015;2015. pii: bcr2015211598.
6. Sarbu N, Bargalló N, Cervera R. Advanced and conventional magnetic resonance imaging in neuropsychiatric lupus. F1000Res 2015;4:162.

DOI: 10.4103/aian.AIAN_236_18