Phenytoin-Induced Lupus Erythematosus in a Young Child

To the Editor,

We report the case of a 16-year-old young boy who presented with a single episode of generalized fit in the casualty. The patient had generalized tonic-clinic seizure lasting for a minute followed by post ictal drowsiness at presentation. He did not have any history of seizures in the past or any significant family history. On examination, there were no lateralizing signs or neck rigidity. Magnetic resonance imaging of the brain and electroencephalogram were normal. The patient was loaded with intravenous phenytoin at a dose of 20 mg/kg body weight. He was discharged on tablet phenytoin 300 mg daily. Two months following that, the patient presented with moderate to high grade fever, muscle aches, and joint pains involving both small and large joints of the body for a week. There was no past history of photosensitivity, joint pains, or oral ulcers. On physical examination, malar rash was present [Figure 1]. There was no visible joint swelling or redness. His routine blood investigations revealed hemoglobin of 13.4 g/dL, total leukocyte count of 7800/mm^3, platelet count of 180,000/mm^3, high erythrocyte sedimentation rate of 56 mm/h, and C-reactive protein of 11.6 mg/L. Renal, liver, and thyroid function tests and urinalysis were normal. Urine and blood cultures were sterile. Chest X-ray and abdominal ultrasound examination were normal. Rheumatoid factor and complement levels were also normal; Coomb's test was negative. Antinuclear antibody (ANA) test by indirect immunofluorescence assay was positive in a titer of 1:160 in a homogenous pattern. Antihistone antibodies were also strongly positive, whereas double-stranded DNA antibody test was negative. Cerebrospinal fluid examination was normal. The patient was started on levetiracetam and phenytoin was rapidly tapered off. He was managed on non steroidal anti-inflammatory drugs and corticosteroids. He was given oral prednisolone at a dose of 1 mg/kg/day for the next few weeks followed by gradual dose reduction. The patient responded well to the treatment, his symptoms resolved, and he was discharged. Repeat testing of autoimmune profile at 6 weeks showed improvement in ANA titer (1:80) and negative antihistone antibodies.

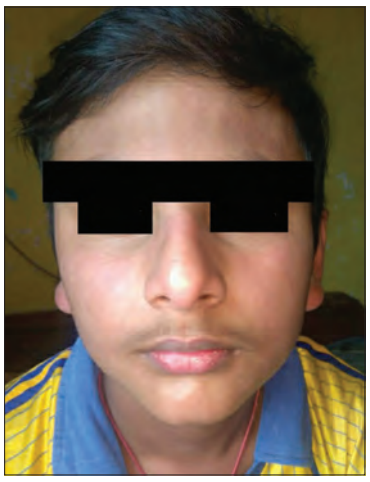

Figure 1: A young male patient with malar rash

Like most antiepileptic drugs, phenytoin has also been implicated in drug-induced lupus erythematosus (DILE). However, the data has been scarce, with very few reported cases so far.[1] The underlying pathophysiology is yet unclear. Various mechanisms have been proposed including slow acetylation, graft versus host-like reaction, and inhibition of methylation on T cells.[1-4] DILE commonly presents with musculoskeletal complaints such as myalgias and nonerosive arthritis.[5,6] Cutaneous manifestations including malar rash and renal involvement are seen less frequently in DILE as compared to idiopathic systemic lupus erythematosus.[5,6] Common serological tests in DILE include elevated ANA titer with a homogenous pattern and positive antihistone antibodies in >75% of patients.[7] On the other hand, double-stranded DNA antibodies occur in <5% of patients with DILE.[7] Early diagnosis of DILE and appropriate treatment can prevent fatal complications.

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.

Abhishek Juneja, Kuljeet Anand

Department of Neurology, Dr. RML Hospital, New Delhi, India

Address for correspondence: Dr. Abhishek Juneja, Department of Neurology, Dr RML Hospital, New Delhi, India.
E-mail: drabhishekjuneja@gmail.com

References

1. Siragusa RJ, Ramos-Caro FA, Edwards NL, Flowers FP. Drug-induced lupus due to phenytoin. J Pharm Technol 2000;16:5-7.
2. Price EJ, Venables PJ. Drug-induced lupus. Drug Saf 1995;12:283-90.
3. Gleichmann H. Systemic lupus erythematosus triggered by diphenyl hydantoin. Arthritis Rheum 1982;25:1387-8.
4. Yung RL, Richardson BC. Role of T cell DNA methylation in lupus syndromes. Lupus 1994;3:487-91.
5. Yung RL, Richardson BC. Drug-induced lupus. Rheum Dis Clin North Am 1994;20:61-86.
6. Hess EV, Mongey AB. Drug-related lupus. Bull Rheum Dis 1991;40:1-8.
7. Rich MW. Drug-induced lupus. The list of culprits grows. Postgrad Med 1996;100:299-302, 307-8.

Access this article online

Quick Response Code:

Website: www.njmonline.org

DOI: 10.4103/NJM.NJM_38_20

How to cite this article: Juneja A, Anand K. Phenytoin-induced lupus erythematosus in a young child. Niger J Med 2020;29:531-2.

Submitted: 30-Apr-2020 **Revised:** 09-Jun-2020
Accepted: 15-Jun-2020 **Published:** 18-Sep-2020