

**CASE REPORT****OPEN ACCESS**

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Post Herpes Simplex Virus (HSV) NMDA Encephalitis

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Anti-N-methyl D-aspartate (NMDA) receptor (anti-NMDAR) encephalitis is caused by immunoreactivity against the NR1 subunit of the NMDA receptor. The anti NMDAR encephalitis has strong association in patients with Herpes Simplex Virus (HSV) encephalitis. Post viral infection the cause of encephalitis was of the autoimmune type (Anti NMDAR Encephalitis). We present that case of a twenty-one-year-old female with acute confusion, irrelevant talk, abnormal behavior and one episode of generalized tonic clonic seizure. She was hospitalized 25 days back with febrile encephalopathy with a positive CSF-PCR for HSV Type 2. Patient was started on steroids and autoimmune encephalitis antibodies profile was sent. This came positive for NMDA receptor and negative for CASPR-2, Type AMPA1/2, LGI-1, DPPX, and GABA_B receptor antibodies. The patient was administered IV rituximab every four weeks after a poor outcome with steroid therapy. The patient was doing well on four weeks follow up. Herpes Simplex Virus (HSV) infection preceded the diagnosis of NMDA Encephalitis. The diagnosis of autoimmune encephalitis should be considered a top differential in relapsing patients as it has a very wide range of presentation. Prompt diagnosis and early treatment are the need of the hour as the ramifications of a mis or missed diagnosis could be detrimental

Keywords: Encephalitis; NORSE; NMDA

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INTRODUCTION

Anti-N-methyl D-aspartate (NMDA) receptor (anti-NMDAR) encephalitis is caused by immunoreactivity against the NR1 subunit of the NMDA receptor. It is beyond doubt one of the most common encephalitis's. The term was first explained and evaluated by Dalmau and his team. They described it as a psychiatric and neurologic condition found in women that had ovarian teratomas. ¹ However recent advances and studies suggest that tumour involvement wasn't necessary to be a part of this condition. It can and may present with or without the tumour. Recent literature has shown an overlap of psychiatric and neurological pathology in association of autoimmune encephalitis. ^{2,3} The disease progresses as Prodromal phase moving into the Psychotic phase followed by a Catatonic stage. ⁴ The anti NMDAR encephalitis has strong association in patients with Herpes Simplex Virus (HSV) encephalitis. Post viral infection the cause of encephalitis was of the autoimmune type (Anti NMDAR Encephalitis). ⁵

CASE REPORT

We report a case of 21-year-old female with acute confusion, irrelevant talk, abnormal behavior and one episode of generalized tonic clonic seizure. She was hospitalized 25 days back with febrile encephalopathy. Her CSF study showed picture of viral encephalitis. CSF PCR was positive for HSV2.

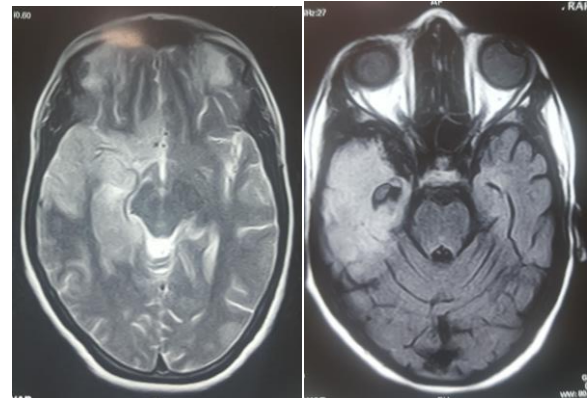
MRI brain done during previous hospitalization showed picture of meningoencephalitis with asymmetrical T2 FLAIR high intensity signals in both temporal lobes.

Repeat CSF examination was normal. CSF PCR was negative for HSV. Repeat MRI brain with contrast showed bilateral asymmetrical altered high intensity signals in both temporal lobes with atrophy of one temporal lobe.

Patient was started on steroids and autoimmune encephalitis antibodies profile was sent. She came out to be positive for NMDA receptor antibodies, while all other antibodies were negative. Ultrasound abdomen was normal for ovarian teratoma.

She did not fully respond to steroids. So, she was given IV rituximab every 04 weeks. She significantly

improved. She was sent home and follow up was planned.



Axial T2W and FLAIR MR brain sequences of a 21 year old female at the level of temporal lobes. Cortical and subcortical asymmetrical high signal (R>L) is seen within bilateral temporal lobe including hippocampal formation and parahippogampal gyrus with associated with mild gyral expansion/swelling and sulcal effacement.

DISCUSSION

Antibody testing to confirm the diagnosis should be requested in all suspected cases especially those presenting with psychiatric signs and symptoms. The current methods for testing antibody detection has a sensitivity and specificity of 100%. ⁶

It is beyond doubt one of the most common encephalitis's. The term was first explained and evaluated by Dalmau and his team. They described it as a psychiatric and neurologic condition found in women that had ovarian teratomas. ¹ However recent advances and studies suggest that tumor involvement wasn't necessary to be a part of this condition. It can and may present with or without the tumor.

We highlight and stress upon the atypical presentations, prompt diagnosis and early treatment of anti-NMDA-receptor encephalitis as the ramifications of a mis or missed diagnosis could be detrimental. The extensive investigations, detailed history and physical exam is ambiguous in giving us a definitive diagnosis early on, especially in case of overlapping neurological and psychiatric presentations having strong associations with the medical condition.

CONCLUSION

The diagnosis of autoimmune encephalitis should be considered a top differential in relapsing patients as it has a very wide range of presentation. Prompt diagnosis and early treatment are the need of the hour as the ramifications of a mis or missed diagnosis could be detrimental.

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