# A Rare Case of NMDA Receptor Antibody Encephalitis

ONE BROOKLYN HEALTH SYSTEM
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## Introduction

Anti –N-Methyl-D-Aspartate receptor antibody (NMDA-RA) encephalitis is an immune-mediated syndrome that can be difficult to diagnose [1]. Variations in the clinical presentation of patients can delay the diagnosis, preventing the initiation of medical treatment and aggressive rehabilitation. Symptoms may present similarly to schizophrenia or substance abuse induced psychosis [2]. Clinical evaluation is supported by laboratory workup and cerebrospinal fluid assays.

## Case Description

- 35 year old male admitted to the medicine service for multiple episodes of stiffness, immobility, behavioral changes, and confusion.

- CT and MRI of the head were negative. EEG was negative for seizure activity.

- He underwent a lumbar puncture and was found to have NMDA receptor antibodies in his cerebral spinal fluid. Incidentally, the patient was found to have latent TB and HSV infections for which he was started on rifampin and valacyclovir respectively.

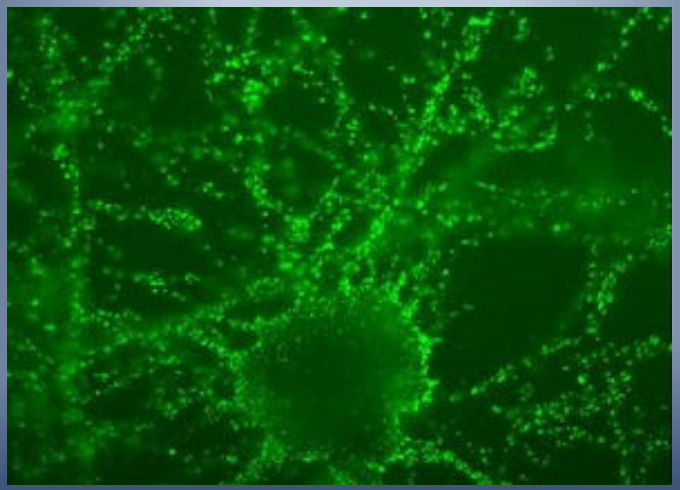
- The diagnosis of NMDA encephalopathy prompted further imaging to search for an underlying tumor. Urology performed a cystoscopy with a biopsy and found carcinoma in-situ in the bladder.

- After a 4-week course of rituximab and several rounds of intravenous steroids, the patient was discharged to our traumatic brain injury unit with instructions to follow up with urology for excision of the carcinoma.

- During his rehab stay he successfully recovered cognitive and physical function, progressing from moderate assistance to supervision in all areas.

## Pertinent Workup

- EEG: negative, CT/MRI brain: normal
- Neurology: CSF testing
- Neuropsychiatry evaluation



Immunofluorescence brain cell staining after NMDA induced brain damage in a laboratory setting [5]

## Discussion

- NMDA-RA encephalitis is a rare autoimmune disorder that is associated with antibodies formed against an underlying tumor [1].
- These antibodies then cross react with NMDA receptor proteins found in the brain [3].
- Women are affected 4x more than men. The disorder is associated with a neoplasia, particularly ovarian teratomas [4].
- Patients most commonly present with neuropsychiatric symptoms and seizures [4].
- Treatment can include glucocorticoids, plasma exchange, IVIG, and rituximab [4].
- Prompt diagnosis, medical treatment, followed by rehabilitation is critical to improving this patient's quality of life by preventing further deconditioning.

## Conclusions

- This case highlights a rare autoimmune disorder that can take time to diagnose, leading to a prolonged hospital course and placing the patient at risk of progressive deconditioning.
- A multidisciplinary care approach begins with prompt medical diagnosis and medical treatment, followed through with acute rehabilitation to prevent physical and cognitive deconditioning.

## REFERENCES

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