# A CASE OF ANTI-NMDAR LIMBIC ENCEPHALITIS IN PREGNANCY

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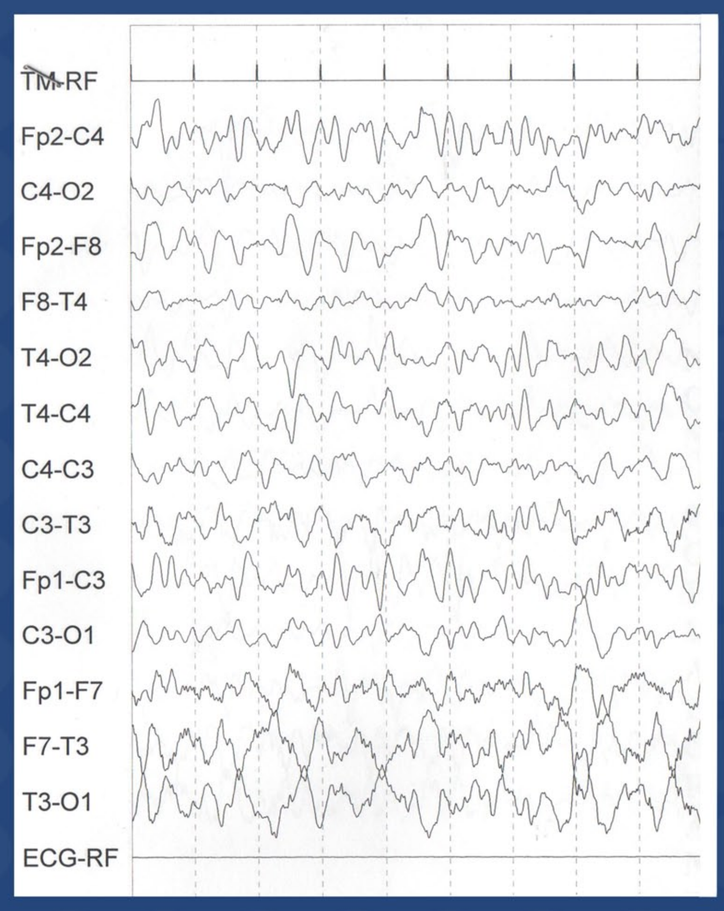
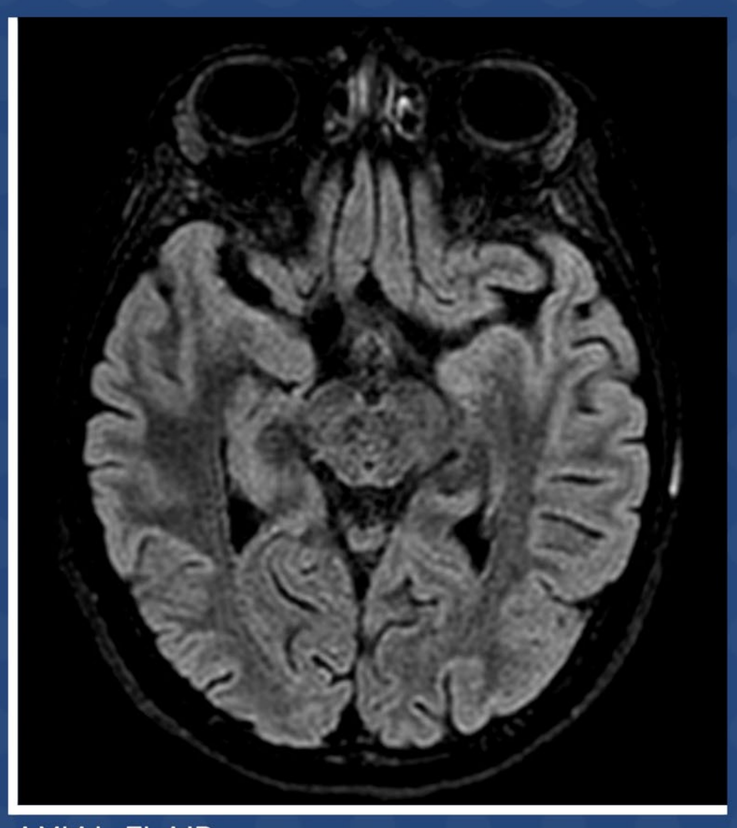
A previously healthy 23-years-old female with an history of cannabis and crack abuse, was admitted to psychiatric hospital after one month of worsening of her mental status, with sudden onset of hallucinations, delusion and paranoid thoughts. Shortly after her admission, an unknown pregnancy was diagnosed, at about 14 gestational weeks Right after being informed of the pregnancy, the patient became cathatonic. Pregnancy was then terminated on a court order. One month after her hospitalization a neurological consultation was done: she was catatonic, with diffuse hypertonus and had masticatory movements. An EEG showed marked alterations, with very low diffuse patten of wave complexes. Complete lab chemistry evaluation was unsignificant. CSF examination was normal except for presence of oligoclonal Ig both in liquor and serum. MRI showed a slight and asimmetrical bilateral oedema and hypersignal on long-Rt sequences of both hippocampi and giri dentati. Serum anti-NMDAR antibodies were present. Ovaric teratoma and other neoplasms were ruled out. Patient was treated with antiepileptic drugs and i.v. human immunoglobulines, without any improvement, yet she worsened and went into a status epilepticus. She was then admit ted in critical care Unit, and treated with drug induced burst suppression and four administrations of rituximab, with gradual clinical benefit. At a six month follow up, she executes simple orders and says a few words; she has developed a compulsive self-erotic behaviour and hypersexuality. She is free from seizures from three months.



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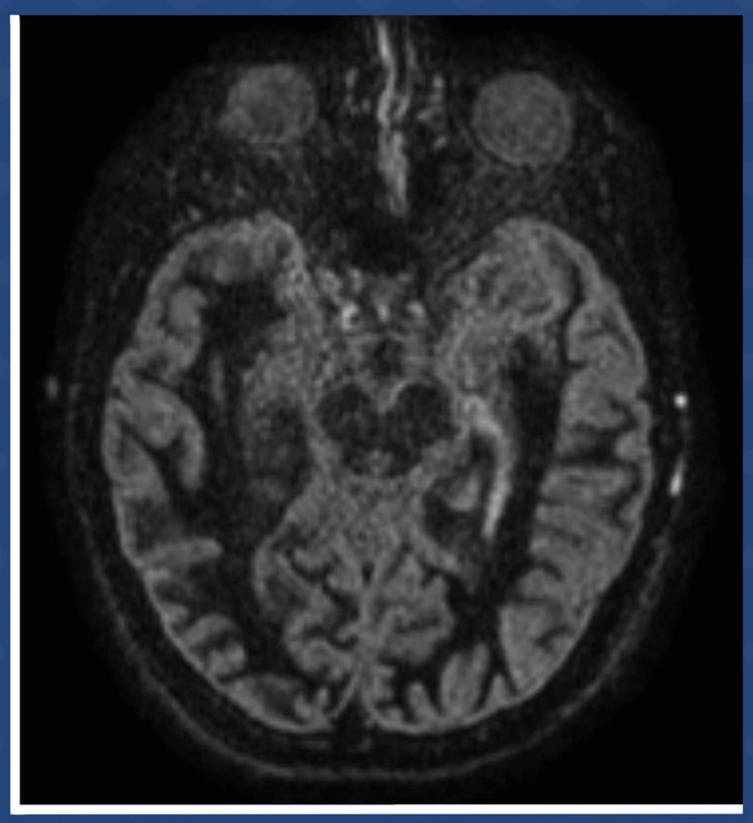

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## DISCUSSION

A previously healthy 23-years-old female with an history of cannabis and crack abuse, was admitted to psychiatric hospital after one month of worsening of her mental status, with sudden onset of hallucinations, delusion and paranoid thoughts. Shortly after her admission, a pregnancy was diagnosed, at about 14 gestational weeks. After being informed of the pregnancy, the patient became catatonic. Pregnancy was terminated on a court order. At this time a neurological consultation was done: she was catatonic, with diffuse hypertonus and had masticatory movements. An EEG showed a with very low diffuse patten of wave complexes. Lab chemistry evaluation was unsignificant. CSF examination showed only presence of oligoclonal Ig both in liquor and serum. MRI showed a slight and asimmetrical bilateral oedema and hypersignal on long-Rt sequences of both hippocampi and giri dentati. Serum anti-NMDAR antibodies were present. Ovaric teratoma and other neoplasms were ruled out. Patient was treated with antiepileptic drugs and i.v. immunoglobulines, without any improvement, yet she went into a status epilepticus. She was then admitted in critical care Unit, and treated with drug induced burst suppression and rituximab, with gradual clinical benefit. At a six month follow up, she executes simple orders and says a few words; she has developed a compulsive self-erotic behaviour. She is free from seizures from three months. Discussion: Anti-NMDAR encephalitis is a rare and life-threatening condition, affecting mostly young women. The exact incidence is unknown. Ovaric teratoma is found in about 56% of cases in females aged 18 and over (1). We found in medical literature 6 previous cases of this pathology, started during pregnancy. The classical NMDAR encephalitis is an highly characteristic syndrome, evolving in 5 stages: the prodromal phase, psychotic phase, unresponsive phase, hyperkinetic phase, and gradual recovery phase, that can least up to three years (2). In our patient, many confounding factors were present: previous history of substance use disorder is a common and well known risk factor for psychosis and depression. Since the unresponsive phase started right after the communication to the patient of her unexpected pregnancy, a catatonic stress reaction was hypothesized. It is important to stress that anti NMDAR encephalitis could be a pathology more frequent than expected, and that suspect index should be high: we recommend the use of EEG, that is a sensible and functional tool. Our case stresses the importance of a complete neurological work-up in young women with unexplained neuro-psychiatric syndromes, that consider also anti -NMDAR encephalytis.

1) N.R. Florance, R.L. Davis, C. Lam, C. Szperka, L. Zhou, S. Ahmad, C.J. Campen, H. Moss, N. Peter, A.J. Gleichman, C.A. Glaser, D.R. Lynch, M.R. Rosenfeld, J. Dalmau Anti-N-methyl-d-aspartate receptor (NMDAR) encephalitis in children and adolescents
2) BMJ Case Rep. 2015 Apr 29;2015. pii: bcr2014208823. doi: 10.1136/bcr-2014-208823. Steroid unresponsive anti-NMDA receptor encephalitis during pregnancy successfully treated with plasmapheresis. Shahani L1.