Limbic encephalitis is a form of encephalitis that affects mainly the hippocampus/forebrain. It is caused by auto-immunity but the majority of cases are associated with a tumour. In such cases, cure is only achieved when the tumour is removed completely. The illness is classified according to the auto-antibody that causes the disease, the most common are: Anti-Hu, which is associated with small-cell carcinoma of the lungs; Anti-Ma2, associated with germ-cell tumours of the testis and Anti-NMDAR (N-methyl-D-aspartate Receptor), associated to tumours of the ovary.

A 24 years old woman was taken into Hospital due to severe behavioural disturbance, with agitation, delusions, paranoia and hallucinations. She also presented uncontrolled fever and opsoclonus-myoclonus that rapidly progressed to catatonia and loss of consciousness. Examination of cerebrospinal fluid (CSF) showed increased monocytes and cranial tomography was normal. With the suspicion of viral meningitis treatment was started with aciclovir without improvement. New CSF examination showed 90% monocytes and negativity for tumoral cells; Magnetic Resonance detected several hyperintense lesions at frontal lobe; tumor markers were normal except Ca 19.9: 52.4; Thorax-Abdomen-Pelvis Tomography found a calcified lesion at right annexe that was diagnosed with Transvaginal Ultrasound as a 10mm dermoid cyst in the right ovary. With the suspicion of paraneoplastic limbic encephalitis treatment with high doses of metilprednisolone and intravenous immunoglobulin was started with partial improvement while right ooforectomy was performed uneventful. Pathology Examination revealed the presence of a mature teratoma with glial cells. Three days after surgery there was a marked clinical improvement and later on, the results at CSF for Antibodies arrived being positive for NMDA-R.

Even small ovarian teratomas containing nervous tissue may express NMDAR subunits that react with patients’antibodies triggering limbic encephalitis. But the diagnosis is difficult and takes time and meanwhile patients may die due to neurological deterioration therefore, a high suspicion is needed and a prompt intervention required even if confirmation is still pending.