Case study

A CASE REPORT ON SCHIZOPHRENIA WITH AUTOIMMUNE ENCEPHALITIS

ABSTRACT

Background Schizophrenia is a serious mental disease with a high mortality rate and severe social consequences. Due to insufficient knowledge about its etiopathogenesis, curative treatments are not available. new research concepts are the mild encephalitis hypothesis of schizophrenia, developed mainly by Karl Bechter and Norbert Müller. According to this hypothesis, a significant subgroup of schizophrenia patients suffers from a mild, but chronic, form of encephalitis with markedly different etiologist ranging from viral infections, traumas to autoimmune diseases. This inflammatory process is thought to occur in the beginning or during the course of the disease. **Presentation of case:** The authors present case of a 65-year-old female got admitted in female psychiatric ward AVBR Hospital Sawangi Meghe, Wardha Maharashtra with chief complaint of forgetfulness, interest in environment decline, unable to communicate, poor performance at work, muttering to self, sleep disturbance, seeing people which are not seen other, fearfulness. all necessary investigation done, in mental status examination founded impairment in memory, disorientation cognitive function impairment, RBC count 3.82, WBC count 5300, Hb% 12, calcium 8.1, urea 26, creatinine 0.6, sodium 142, potassium 4.0. Alkaline phosphate 89. HIV, HBSAG non-reactive, A high white blood cell count in the cerebrospinal fluid An MRI that shows signs of brain inflammation. A mild elevation of antinuclear antibody (1: 40 titter) was noted. Blood and CSF were positive for oligoclonal bands. **Result:** The patient was received symptomatic treatment antianxiety, antipsychotic drug alleviates hallucinations and delusion. **Discussion:** Disturbances of consciousness and orientation, catatonia, speech dysfunction, focal neurological signs, epileptic seizures/EEG abnormalities or autonomic dysfunction are warning signs in psychiatric patients which should always induce cerebrospinal fluid analysis with determination of antineuronal autoantibodies. Currently established immunotherapy strategies are summarised, taking into account international expert advice. **Conclusion**: Guided by clinical warning signs, our qualitative review enables rapid and reliable diagnosis of definite autoimmune encephalitis. This is of high relevance for the affected individuals, since early and sufficiently intense immunotherapy often leads to a good prognosis despite severe illness.

Keywords: Narcolepsy, Anti-NMDAR receptor encephalitis, schizophrenia, hallucination, seizures, Flat affect.

INTRODUCTION

Schizophrenia is a severe psychiatric disorder that affects about 1% of the worldwide population.[1] People with schizophrenia may seem like they have lost touch with reality, which causes significant distress for the individual, their family members, and friends that affects how a person thinks, feels, and behaves.[2] It is characterized by hallucinations, delusions, disorganization of thought and behaviour, depression, flattened affect, cognitive disorders, and social withdrawal. that affects how a person thinks, feels, and behaves.[3] Negative symptoms include "Flat affect,"[4] Left untreated, autoimmune encephalitis can quickly become serious. It may lead to coma or permanent brain injury. In rare cases, it can be fatal. Autoimmune encephalitis was once considered rare, but doctors are finding more

cases as their ability to diagnose it improves. A 2018 study found 13.7 cases per 100,000 people.[5]

Primary schizophreniform psychoses are caused by a complex interaction between multiple genes and environmental factors. Large, genome-wide studies have identified over 100 distinct gene sites that contribute to the relative risk of psychotic symptoms. Secondary forms are based on clearly identifiable causes in the sense of etiology or according to recognizable pathogenesis. Such secondary forms can be linked to autoantibody (Ab)-associated autoimmune processes such as anti-*N*-Methyl-D-aspartate receptor [NMDA-R] encephalitis. autoimmune encephalitis (AE) was redefined with the first description of anti-NMDA-R encephalitis. Since then, a large number of other antineuronal Abs against cell surface antigens and their associated syndromes have been identified. Because these syndromes can be accompanied by polymorphic psychotic symptoms, immunological concepts of schizophreniform psychoses have gained considerable attention since. In a German case series of 100 patients with different forms of AEs with Abs against antineuronal antigens, over half of the patients (60%) presented with psychotic symptoms. In most cases that are positive for antineuronal Abs, patients develop clear neurological symptoms in the course of the disease, such as dystonic movement disorders or epileptic seizures. For AE with predominant psychotic symptoms, the term "autoimmune psychosis" (AP) was recently suggested. The changing nomenclature for autoimmune neuropsychiatric phenomena is encephalopathy Traditionally, this term has been used mainly for persistent brain damage. The term has also been used when secondary brain damage was assumed, but the exact mechanism of the disease remained unclear (e.g., hepatic or epileptic encephalopathy). Because antineuronal autoantibodies (Abs) can now be detected, cases of encephalopathy not previously recognized as neuroinflammatory can comply with the criteria of autoimmune encephalitis.[6]

Autoimmune encephalitis is a collection of related conditions in which the body's immune system attacks the brain, causing inflammation. The immune system produces substances called antibodies that mistakenly attack brain cells. Like multiple sclerosis, the disease can be progressive (worsening over time) or relapsing-remitting (with alternating flare-ups and periods of recovery). Autoimmune encephalitis has many subtypes that depends on the antibodies present.[7]

In many cases, the cause of autoimmune encephalitis is unknown. But experts say it can be caused by exposure to certain bacteria and viruses, including streptococcus and herpes simplex virus. A type of tumour called a teratoma, generally in the ovaries, that causes the immune system to produce specific antibodies. Rarely, some cancers that can trigger an autoimmune response (when the immune system attacks the body's own tissues).[8]

kinds of autoimmune encephalitis are ADEM, Anti-NMDAR receptor encephalitis, Hashimoto's encephalopathy, limbic encephalitis, Rasmussen's encephalitis. sign and symptoms are included over a period of day and weeks. Flu-like symptoms, like headache, fever, nausea and muscle pain. Psychiatric symptoms may appear, disappear and reappear. Later symptoms may be more severe, such as a lower level of consciousness and possible coma.[10]

Impaired memory and understanding, Unusual and involuntary movements, Involuntary movements of the face (facial dyskinesia), Difficulty with balance, speech or vision, Insomnia, Weakness or numbness, Seizures, Severe anxiety or panic attacks, Compulsive behaviours, Altered sexual behaviours, Behaviour changes such as agitation, fear or euphoria, Loss of inhibition, Hallucinations, Paranoid thoughts, Loss of consciousness or coma.[11]

PRESENTATION OF CASE

This case selected from AVBR Hospital Sawangi Meghe wardha. The authors present case of a 65-year-old female patient referred to female psychiatric ward AVBR Hospital Sawangi Meghe, Wardha, Maharashtra with chief complaint memory loss, of forgetfulness, restlessness, bizarre behaviour, confusion, interest in environment decline, unable to communicate, poor performance at work, muttering to self, sleep disturbance, and hallucinations seeing people which are not seen other, fearfulness in the last 2 year. there was no any history of mental illness in her family. all necessary investigation done, such as history collection, mental status examination founded impairment in memory, disorientation, cognitive function impairment, mini mental status examination score of 13/30, verbal fluency poor, her general physical examination was unremarkable without evidence of cataracts. RBC count 3.82, WBC count LP was performed, and cerebrospinal fluid (CSF) showed white blood cell count, 8 mm neutrophils, Hb% 12, calcium 8.1, urea 26, creatinine 0.6, sodium 142, potassium 4.0. Alkaline phosphate 89. 1 mm; lymphocytes, HIV, HBSAG non-reactive, A high white blood cell count in the cerebrospinal fluid An MRI that shows signs of brain inflammation. A mild elevation of antinuclear antibody (1 : 40 titter) was noted. Blood and

CSF were positive for oligoclonal bands. CSF testing for herpes simplex virus 1 and 2 DNA, varicella zoster PCR, VDRL, FTA ABS, enterovirus, and viral cultures were negative. Her past medical history was relevant for vitamin B OR D deficiency. There was no any past or present surgical history. She had no history of smoking, alcohol, or other drug misuse.

Patient received the treatment of empirical treatment with vancomycin, ceftriaxone, and acyclovir for possible infectious causes of encephalitis and intravenous immunoglobulin (IVIG) 400 mg/kg/day for 5 days and methylprednisolone 1 g/day for 5 days. Plasma exchange therapy also administered. Injectable Tacrolimus, azathioprine, and sirolimus clozapine, haloperidol, also given. patient condition improved. she observed the conversation between family member and improvement in speeches also finds.

Generally, the treatment of this illness includes Surgery to remove a teratoma. Steroids to reduce brain inflammation and the immune system's response. Plasma exchange (removal and replacement of the liquid part of the blood) to take out harmful antibodies. Intravenous immunoglobulin (IVIG), given in an IV drip, to introduce antibodies from the plasma of healthy donors. IVIG removes harmful antibodies and reduces inflammation. Immunosuppressant medications, if other treatments are not effective.[12]

DATA EXTRACTION: Sources of data collection included libraries, hand book, PubMed, Cochran, Medline.

DISCUSSION:

Diagnosis of probable anti-NMDAR encephalitis requires the onset of at least four of the following symptoms within 3 months: abnormal behaviour or cognitive dysfunction, speech dysfunction, movement disorder, dyskinesia, rigidity/abnormal posture, decreased level of consciousness, autonomic dysfunction, or central hypoventilation. Patients must also have either an abnormal electroencephalogram or CSF with pleocytosis or oligoclonal bands and reasonable exclusion of other disorders.[13]

Autoimmune mechanisms causing diverse psychiatric symptoms are increasingly recognized and brought about a paradigm shift in neuropsychiatry. Identification of underlying antibodies against neuronal ion channels or receptors led to the speculation that a number of patients go misdiagnosed with a primary psychiatric disease. However, there is no clear consensus which clinical signs in psychiatric patients should prompt further investigations including measurement of anti-neuronal autoantibodies. We therefore aimed to analyse the

presenting symptoms in patients with autoimmune encephalitis and the time between symptom onset and initiation of antibody diagnostics. For this, we recruited 100 patients from the Charité Centre for Autoimmune Encephalitis between May and October 2016, including all types of autoimmune encephalitis's. Psychiatric abnormalities were the most common clinical symptoms and were the presenting sign in 60%. One-third of patients were initially hospitalized in a psychiatric ward. All patients positive for antibodies against the N-methyl-d-aspartate receptor showed behavioural changes, hallucinations, memory deficits, catatonia, or delusions. Patients positive for antibodies against other cell surface or intracellular antigens were often hospitalized with a psychosomatic diagnosis. The time between occurrence of first symptoms and antibody testing was often alarmingly prolonged. In patients with symptom onset between 2013 and 2016, the mean delay was 74 days, in cases diagnosed between 2007 and 2012 even 483 days, suggesting though that increased awareness of this novel disease group helped to expedite proper diagnosis and treatment. By analysing the medical records in detail, we identified clinical signs that may help to assist in earlier diagnosis, including seizures, catatonia, autonomic instability, or hyperkinesia. Indeed, reanalysing the whole cohort using these "red flags" led to a 58% reduction of time between symptom onset and diagnosis. We conclude that the timely diagnosis of an autoimmune psychiatric disease can be facilitated by use of the described clinical warning signs, likely enabling earlier immunotherapy and better prognosis. Also, the threshold for cerebrospinal fluid analysis and autoantibody testing should be low.[14]

One of the researches founded that Ten out of 61 cases were anti-NMDAR antibody positive in typical encephalitis cases and cases in a broader range of psychiatric disorders including narcolepsy and schizophrenia. In addition to 3 typical cases, we found 7 cases with anti-NMDAR antibody associated with various psychotic and sleep symptoms, which lack any noticeable clinical signs of encephalitis (seizures and autonomic symptoms) throughout the course of the disease episodes; this result suggests that further discussion on the nosology and pathophysiology of autoimmune-mediated atypical psychosis and sleep disorders is required.[15]

CONCLUSION

Anti-NMDAR encephalitis is a very rare entity in male patients, especially in those without any underlying malignancies. However, physicians should consider this diagnosis as a differential in any young patient presenting with unexplained neuropsychiatric symptoms.

Younger patients who present with an initial episode of bizarre behaviour should be assessed to rule out major organic causes, as delay in diagnosis leads to poor patient outcomes. Although literature suggests a predominance of anti-NMDAR encephalitis occurs in women with ovarian teratomas, this case demonstrates that the diagnosis should also be considered in men without any signs and symptoms of a neoplastic process, and a thorough workup for the infectious source should be conducted.

CONSENT

As per international standard or university standard, patient written consent had been taken.

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