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# Prodromal Infection Trigger Acute Onset Anti-DPPX Encephalitis without CNS Hyperexcitability Symptoms: A Case Report

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**Abstract:**

Dipeptidylpeptidase-like protein-6 (DPPX) antibody associated encephalitis can present with protracted encephalitis, symptoms of central nervous system(CNS) hyperexcitability, and cerebellar signs. Most of these patients onset subacutely and have diarrhea in the initial phase. We report a 26-year-old Chinese female, who had ten days history of upper respiratory tract infection, followed by headache, dizziness, gait instability suddenly. Neurological examination demonstrated prominent vertical nystagmus, astasia and cognitive impairment. CSF testing for neuronal autoantibodies revealed DPPX antibody IgG titerAfter treatment with IV methylprednisolone combined with IV immunoglobulin, her neurological symptoms improved markedly. This case illustrated that anti-DPPX autoimmune encephalitis could be triggered by prodromal infection and onset acutely. Patients may only show cerebellar signs and cognitive impairment without CNS hyperexcitability. Performing an auto-antibody examination might aid differential diagnosis. Dipeptidylpeptidase-like protein-6 antibody is a rare neuronal surface antigen that might cause autoimmune encephalitis Anti-DPPX encephalitis commonly Dؤects elder people, and sympton onset is usually insidious. Most of the patients may have gastrointestinal signs before showing CNS manifestation. Neurocognitive deficLts, sleep disturbance, central hyperexcitability, cerebellar signs are frequently observed Here, we describe a Chinese anti-DPPX encephalitis young patient presenting with acute onset, prominent vertical nystagmus and ataxia, who was triggered by prodromal infection. Antibody-associated encephalitis characterized by specLfic autoantibodies has been recognized in the last ten years. It is a diverse group of syndromes that include two groups: classic paraneoplastic disorders (PNDs) and autoimmune encephalitis [2]. He latter is caused by the direct interaction between antibodies and their target antigens on neuronal surfaces and synapses [3]. Our case was a 26- year-old Chinese woman who presented with acute onset ataxia, vertigo, and cognitive impairment.

He patient showed obvious vertical and torsional nystagmus and ataxia. Cognitive impairment of short-term memory was also observed, but she did not have any gastrointestinal symptoms or progressive encephalomyelitis with rigidity and myoclonus (PERM)- like presentation. DPPX is a regulatory subunit of the Kv4.2 potassium channel complex, which is expressed in neuronal dendrites and soma. Its function is to increase the surface expression and channel conductance of Kv4.2 channels additional treatment with plasma exchange and rituximab. Patients with a long-term history of AE might have lengthy hospitalizations and multiple relapses [4-6]. Herefore, an early diagnosis and initiation of therapy is very important for a good long Overall, our case verLfied that prodromal infection may trigger acute onset anti-DPPX encephalitis. Prominent vertical nystagmus, ataxia, cognitive impairment without PERM may occur in anti-DPPX encephalitis. Early immunotherapy is important for the positive longterm outcomes of patients. Her leukocyte count had decreased to 39/mL (96% lymphocytes) and the protein level was 31mg/dl (0–60 mg/dl). At her 6-month follow-up she was able to walk unassisted without any evidence of ataxia last three months. Family history revealed no abnormalities.

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Neurological examination demonstrated prominent vertical, horizontal, and torsional nystagmus components, obvious dysmetria by finger-to-nose test, and astasia. He minimental state examination (MMSE) score was 20. CSF testing for neuronal autoantibodies revealed a dipeptidylpeptidase-like protein-6 antibody IgG titer of 1:1 (Neuroimmunology Laboratory, Kingmed Diagnostics, using cellbased indirect Lmmunofluorescence assay), providing evidence for immune-mediated encephalitis