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Acute Neuropsychiatric Manifestation on Chronic Cerebral Sequelae in a Young Adult: The Hidden Face of Inflammatory Encephalopathy

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Abstract | **Case Report**

Background: Acute psychiatric onset in young adults requires systematic exclusion of organic etiologies, particularly autoimmune encephalitis and central nervous system (CNS) vasculitis, which frequently mimic primary psychotic disorders. ***Case Presentation:*** We report an 18-year-old male presenting with an acute neuropsychiatric syndrome combining agitation, aggression, hallucinations, persecutory delusions, and confusion, in a febrile context. Neurological examination revealed objective focal deficits, including right-sided pyramidal signs, left mydriasis, and left peripheral facial weakness. MRI demonstrated chronic structural lesions (left frontal porencephaly and left parietal atrophy) as well as new lacunar ischemic abnormalities in the right parietal white matter, consistent with an active process. Infectious investigations were unremarkable. ***Conclusion:*** This case underscores the importance of considering neuroimmune or vascular etiologies in any acute-onset psychiatric presentation, even when chronic cerebral sequelae are present. According to DSM-5, the appropriate diagnosis is Psychotic Disorder Due to Another Medical Condition. The combination of acute psychosis with objective neurological signs constitutes a major red flag requiring urgent etiological assessment and initiation of targeted immunomodulatory therapy.

Keywords: Acute Psychosis, Autoimmune Encephalitis, CNS Vasculitis, Focal Neurological Deficits, Neuroimmune Etiologies, Young Adult.

1. INTRODUCTION

In young adults, acute or atypical psychiatric presentations often reflect an underlying organic etiology. Autoimmune encephalitides and CNS vasculitides are increasingly recognized for presenting with rapid-onset psychosis, behavioral change, altered consciousness, or focal neurological deficits [1,2]. These entities may be misdiagnosed as primary psychotic disorders if neurological signs and neuroimaging findings are overlooked.

We present the case of an 18-year-old male admitted for an acute psychotic and behavioral disturbance in whom the presence of objective focal neurological signs and new ischemic lesions over chronic brain sequelae guided the diagnosis toward an active inflammatory encephalopathy.

2. CLINICAL OBSERVATION

2.1 Psychiatric Presentation

The patient, previously healthy, developed over one week:

- Severe agitation and aggression
- Disorganized behavior
- Auditory and visual hallucinations
- Persecutory delusions targeting family members
- Marked insomnia and an initial febrile illness

2.2 Neurological Examination

Despite predominant psychiatric symptoms, the neurological exam yielded key findings:

- Mild confusional state (GCS 14/15)
- Right-sided pyramidal signs (hyperreflexia, extensor plantar response)
- Left mydriasis
- Left peripheral facial weakness

These objective focal deficits strongly suggested an acute cerebral process rather than a primary psychotic disorder.

2.3 Neuroimaging

MRI and MRA demonstrated:

Chronic Sequelae

- Left frontal porencephalic cavity
- Left parietal cortical–subcortical atrophy with gliosis

Acute Findings

- Recent lacunar ischemic lesions in the right parietal deep white matter (restricted diffusion)

Macrovascular imaging (arterial and venous sequences) was unremarkable.

The coexistence of longstanding sequelae with new ischemic lesions suggested an ongoing inflammatory or microangiopathic process.

3. DISCUSSION

3.1 DSM-5 Classification

According to the DSM-5 criteria for Psychotic Disorder Due to Another Medical Condition, a diagnosis requires:

1. Prominent hallucinations or delusions
2. Evidence that the disturbance is the direct physiological consequence of a medical condition
3. Not better explained by another mental disorder
4. Not occurring exclusively during delirium

Our patient met all criteria:

- Prominent psychotic symptoms
- Demonstrable cerebral lesions compatible with encephalopathy
- No prior psychiatric disorder
- Neurological signs inconsistent with a primary psychotic disorder

This categorization is essential as it redirects diagnosis and treatment toward an underlying neuroimmune or vascular disease rather than toward a schizophrenia spectrum disorder.

3.2 Etiological Hypotheses

Autoimmune Encephalitis (AE)

The combination of acute behavioral change, hallucinations, psychosis, confusion, and fever is highly suggestive of AE, particularly anti-NMDA receptor encephalitis [1,3].

Cerebral Vasculitis / Inflammatory Microangiopathy

The presence of multiple new lacunar ischemic lesions with normal large-vessel angiography strongly suggests a small-vessel inflammatory vasculopathy [2].

These two processes are not mutually exclusive and may present with overlapping features.

3.3 Therapeutic Implications

The identification of a medical cause for the psychotic symptoms fundamentally alters management. Urgent evaluation should include:

- CSF analysis with autoimmune encephalitis panel
- Comprehensive infectious and inflammatory screening
- Early initiation of immunomodulatory therapy (high-dose corticosteroids, intravenous immunoglobulins, or plasmapheresis)

These measures differ radically from standard treatment of primary psychotic disorders and may prevent neurological deterioration.

4. CONCLUSION

This case highlights the necessity of a thorough neurological examination and neuroimaging in any acute psychiatric presentation in young adults. The coexistence of psychosis, fever, and focal neurological deficits should immediately raise suspicion of an inflammatory or vascular encephalopathy.

Classifying the condition under Psychotic Disorder Due to Another Medical Condition (DSM-5) ensures appropriate diagnostic orientation and timely initiation of immunotherapy, potentially preventing permanent neurological sequelae.

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