

# A Case of First Episode Psychosis Uncovering Encephalomalacia in a Young Female

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## ABSTRACT

**Aim and background:** The diagnosis of organic psychosis is made when psychotic symptoms present after a specific neurological or organic event. One such dysfunction of brain structure is encephalomalacia, which refers to softening of brain tissue and can present with varying symptomatology. There is a dearth of cases reported showing quick recovery in patients with organic psychosis attributable to encephalomalacia.

**Case description:** A 25-year-old female presented with acute onset aggressiveness, insomnia, social withdrawal, paranoid ideation, hallucinatory behavior, reduced appetite, and poor self-care. Routine investigations were normal. The computed tomography (CT) scan brain plain revealed encephalomalacia in the left parietal lobe. Organic psychosis was kept as a provisional diagnosis. There was a satisfactory outcome on low-dose antipsychotic on follow-up day 14. She came for follow-up till 3 months and was maintaining well.

**Conclusion:** Encephalomalacia in left parietal lobe region can present with acute psychosis and relatively quick and satisfactory outcome can be seen.

**Keywords:** Encephalomalacia, Gliosis, Psychosis.

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## INTRODUCTION

The diagnosis of organic psychosis is made when psychotic symptoms present after a specific neurological or organic event.<sup>1</sup> This diagnostic entity may include symptoms of altered sensorium, impairment of cognition, psychomotor disturbances, delusions, hallucinations, mood changes along with personality problems, which may develop over time.<sup>2</sup> One such dysfunction of brain structure that can present with varying symptomatology is encephalomalacia, which refers to the softening of brain tissue. Encephalomalacia affecting periventricular as well as parietal regions of the brain have been associated with an increased risk of psychosis in the existing literature.<sup>3</sup> White matter lesions of the parietal lobe hindering the connection between the frontal and parietal cortices have been found to be responsible for negative symptoms and dysfunction in social domain among patients with psychotic disorders.<sup>4</sup> Yildiz et al. have also stated that, in some individuals with emerging symptoms of schizophrenia, changes in the structure and function start in the parietal lobe.<sup>5</sup>

Encephalomalacia can ensue following infarction, trauma, infection, ischemia, or any brain injury.<sup>6,7</sup> There is a scarcity in literature on encephalomalacia in adults.<sup>8</sup> The existing literature on encephalomalacia is also related to seizure disorders and/or neurological disorders.<sup>9</sup> Only a few case reports are available describing symptoms of progressive cognitive impairment, dementia, depression, and delusions in adults with encephalomalacia.<sup>10</sup> This is a case of gliotic changes and encephalomalacia in a 25-year-old female who presented with abrupt onset psychosis.

## CASE DESCRIPTION

A 25-year-old unmarried female presented to the psychiatry clinic with chief complaints since 10 days characterized by abrupt onset abusive and assaultive behavior, paranoid ideation, talking

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irrelevantly, poor self-hygiene, disturbances in sleep, and reduced food intake. These symptoms had abrupt onset with difficulty in sleeping. She was taken to multiple faith healers. No medication was given. She then got referred for a psychiatric consultation.

There were no identifiable stressors or precipitating factors. There was no history reported of any psychoactive substance use, depression, mania, obsessions, loss of consciousness, focal neurological deficits, seizures, headache, or head injury.

She was functioning well premonitory. No past history of any psychiatry disorder, seizure disorder, or head trauma was reported. There was no significant family history. Her highest educational qualification was 10th standard. Her medical history was insignificant and menstrual cycle was regular.

On general examination, her vitals were stable. She had no neurological deficits on systemic examination. There was no evidence of meningitis or raised intracranial tension. Fundoscopy revealed no abnormalities. Examinations of the cardiac, respiratory and gastrointestinal system revealed no abnormalities.

On mental status examination, she appeared unkempt, untidy, and had disheveled hair and clothes. She was withdrawn, not cooperative, and had poor eye contact. Rapport was established with difficulty. She had increased goal-directed psychomotor activity with reduced volume and volubility of speech. She was found to have persecutory delusions. No hallucination could be elicited. She had irritable mood, blunted affect with poor reactivity, and restricted range. She had poor insight.

On investigation, her hemogram, renal function, thyroid function, liver function, and serum electrolytes were within normal ranges. Her electroencephalogram revealed no abnormalities. Confluent areas of gliosis and encephalomalacia in the left parietal region were revealed on a CT scan of the brain.

A provisional diagnosis of organic psychosis was kept. She was given olanzapine (7.5 mg) for her psychotic symptoms. To prevent extrapyramidal symptoms, she was started on trihexyphenidyl (2 mg). She was also given lorazepam (1 mg) at night. Patient recovered symptomatically. The brief psychiatric rating scale (BPRS) score on day 0 was 78, and day 14 was 28. Her mini-mental status examination score was 29. On follow-up after 30 days, she was completely symptom free, BPRS score was 4, and patient was functioning well. The dose of olanzapine was tapered down to 5 mg and rest was advised to continue same as before. No abnormality was revealed on follow-ups until 3 months, following which patient stopped coming for further consults.

## DISCUSSION

In this case, the patient presented with abrupt onset hallucinatory behavior, paranoid ideation, aggressive behavior, social withdrawal, and decreased self-hygiene. Sachdev et al. found gradual onset of psychotic symptoms presenting post-head injury, which later had chronic course. The previously reported cases have delusion of persecution as the prominent finding, besides neurological symptoms, and widespread damage to the temporal and parietal cortices on neuroimaging.<sup>11</sup> It has already been shown that traumatic brain injury can present with mood and psychotic symptoms with various types with neurological symptoms in a significant number of patients.<sup>12</sup> In contrast, this case presented with an abrupt onset of behavioral abnormalities and psychotic symptoms. This case had subacute course with neither any neurological complaints nor findings on examination.

In our case, encephalomalacia was observed on CT scan in the left parietal lobe. The frontoparietal cortex as reported previously is involved in social functioning and executive functioning, which is dysfunctional in psychotic disorders.<sup>13</sup> The existing literature also points toward involvement of inflammation and infection in the etiopathogenesis of encephalomalacia. This is in line with the findings of the CT scan of this case even though it was not appreciated in the history of the mentioned case.

## CONCLUSION

Patients with an insult to the brain can present with varying psychiatric symptomatology without or without neurological findings and have varying chances of recovery. As observed in the index case, gliotic changes and encephalomalacia in parietal lobe region can present with abrupt onset psychosis. Brain imaging is vital especially in first episode psychosis patients

even if they do not present with head injury, neurological symptoms, or signs.

## Clinical Significance

Brain imaging holds great importance in adults with first episode psychosis. Brain imaging should be done in such patients despite no neurological signs or history of head injury. Usually, patients with organic psychosis and such extensive lesion in the brain do not have a satisfactory outcome so quickly. This case report further establishes the evidence of importance of brain imaging in subacute onset psychosis with good pre-morbid level of function. This case report stands out as the mentioned case had a rather satisfactory and quick recovery.

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## REFERENCES

- Cummings JL. Psychosis in neurologic disease. *Neurobiology and pathogenesis. Neuropsychiatry, Neuropsych Behavioral Neurol* 1992;5:144–150.
- Davison K. Schizophrenia-like psychoses associated with organic cerebral disorders: a review. *Psychiatr Dev.* 1983;1(1):1–33. PMID: 6232606.
- Pan F, Wang JY, Xu Y, et al. Abnormal parietal encephalomalacia associated with schizophrenia: A case report. *Medicine* 2017; 96(10):e6310. DOI: <https://doi.org/10.1097/MD.0000000000006310>.
- Holt DJ, Boeke EA, Coombs G. Abnormalities in personal space and parietal-frontal function in schizophrenia. *Neuroimage Clin* 2015;9:233–243. DOI: <https://doi.org/10.1016/j.nicl.2015.07.008>.
- Yildiz M, Borgwardt SJ, Berger GE. Parietal lobes in schizophrenia: Do they matter? *Schizophr Res Treatment* 2011;581–686. DOI: <https://doi.org/10.1155/2011/581686>.
- Karaman E, Isildak H, Yilmaz M, et al. Encephalomalacia in the frontal lobe: Complication of the endoscopic sinus surgery. *J Craniofac Surg* 2011;22(6):2374–2375. DOI: <https://doi.org/10.1097/SCS.0b013e318231e511>.
- Le TH, Gean AD. Neuroimaging of traumatic brain injury. *Mt Sinai J Med* 2009;76:145–162. DOI: <https://doi.org/10.1002/msj.20102>.
- Alemdar M, Iseri P, Yalug I, et al. Route learning impairment associated with encephalomalacia secondary to traumatic brain injury: A case report. *Appl Neuropsychol* 2008;15:150–155. DOI: <https://doi.org/10.1080/09084280802073328>.
- Desai SD, Patel D, Bharani S, et al. Opercular syndrome: A case report and review. *J Pediatr Neurosci* 2013;8:123–125. DOI: <https://doi.org/10.4103/1817-1745.117842>.
- Li CH, Chou MC, Liu CK, et al. Antiphospholipid syndrome presenting as progressive neuropsychiatric disorders: Two case reports. *Neuropsychiatr Dis Treat* 2013;9:739–742. DOI: <https://doi.org/10.2147/NDT.S44140>.
- Sachdev P, Smith JS, Cathcart S. Schizophrenia-like psychosis following traumatic brain injury: A chart-based descriptive and case-control study. *Psychol Med* 2001;31:231–239. DOI: <https://doi.org/10.1017/S0033291701003336>.
- Achté K, Jarho L, Kyykkä T, et al. Paranoid disorders following war brain damage. Preliminary report. *Psychopathology* 1991;24:309–315. DOI: <https://doi.org/10.1159/000284731>.
- Gottlieb J. From thought to action: the parietal cortex as a bridge between perception, action, and cognition. *Neuron* 2007;53:9–16. DOI: <https://doi.org/10.1016/j.neuron.2006.12.009>.