Case Report

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Psychiatric Morbidity in a Case of Encephalomalacia of an Adolescent Girl

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Abstract

We report a case of an adolescent girl who had changes suggestive of encephalomalacia in the magnetic resonance imaging (MRI) of the brain but presented with psychiatric symptomatology instead of neurological manifestations. Encephalomalacia is softening of brain tissue which may lead to brain changes and present with varied clinical manifestations. Most of the cases reported previously were on infants & children and almost all of them were related to neurological disorders. But cases with psychiatric symptomatology were rarely reported, that too in adolescents. The authors discussed the psychiatric symptom profile, their management and emphasized the importance of imaging of the brain and its association with psychiatric manifestations.

Keywords: Encephalomalacia; Psychiatric Morbidity; Brain Imaging.

Introduction

Encephalomalacia is the softening or loss of brain tissue after cerebral infarction, cerebral ischemia, infection, craniocerebral trauma, or other injury [1]. In the imaging classification of traumatic brain injury, encephalomalacia is a type of chronic condition secondary to injury of the brain [2]. Cerebral softening leads to brain changes which can have varied clinical manifestations. Though very few published data on encephalomalacia are available in case of human beings most of the articles are in infants and children but rarely in adolescents and adults [5]. Almost all of them are related to neurological and/or seizure disorders [3-5].

In adults with encephalomalacia, rare case reports are available who presented with psychiatric morbidities in the form of progressive mental decline, borderline dementia, features of depression, delusion and oedipism [6-7].

Here we present a case of encephalomalacia in an adolescent girl who presented with psychiatric symptomatology.

Case Report

Miss K, a 13-year-old girl from a lower socio-economic background, was brought to the department of psychiatry with multiple complaints of one month duration. This included dizziness, restlessness, weakness, feeling low, headache, body ache, decreased sleep and appetite.

The above symptoms started abruptly with disturbances in sleep. She would sleep for two to three hours with breaks at night. She would complain of heaviness in her head, body ache and weakness. She would not interact much with her family members. She would prefer to stay alone and remained sad. Her personal care was intact.

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There was no precipitating factor. There was no history suggestive of any substance abuse, throbbing pain, vomiting, unconsciousness or any trauma. Her premorbid functioning revealed no abnormality. In the past, there was no history suggestive of any psychiatric illness, seizures and head injury. In her family history too, nothing significant could be detected. Her birth was uneventful and milestones were normal. She was studying in standard six and was an average student. She had attained her menarche and her menstrual cycles were regular.

In general examination, her pulse rate and blood pressure were within normal limits; nothing abnormal was detected in other parameters too. In central nervous system examination, there were no signs of raised intracranial tension or meningitis. There was no neurodeficit and no abnormality was detected in fundoscopy. No abnormality was detected in the respiratory, cardiac and gastrointestinal system.

On mental status examination, she was thinly built, was looking appropriate to her stated age. Partial eye contact was maintained. She was cooperative and rapport was established properly. Her motor activity, as well as speech productivity, was decreased. She expressed ideas of hopelessness and worthlessness. Her mood was depressed. No delusion or hallucination could be elicited.

On investigation her hemoglobin was 11.3g%, total leukocyte count was 6500/cu mm, platelet count was $336x10^3/mm^3$. Fasting blood sugar was 91 mg/dl and postprandial was 114 mg/dl. Blood urea level was 31 mg% and serum creatinine was 0.5 mg/dl. Her serum sodium level was 141 mEq/L and potassium level was 4.6 mEq/L. Her thyroid profile and electroencephalogram (EEG) were within normal limits. MRI brain showed focal encephalomalacia in the right parietal region and gliosis in the right superior frontal region and the right parietal region.

An impression of organic depressive disorder was made. She was put on fluoxetine 20 mg and clonazepam 0.25mg. She had minimal improvement when she came for follow up after three weeks but subsequent visits after one month and two months showed no further improvement. She was sent for consultation from a neurologist. But she didn't turn up after that. No side effect of the drugs was recorded.

Discussion

In our case, though the behavioural disturbances presented with features of depression, its abrupt onset and presence of atypical features like dizziness and restlessness alerted us to investigate the case properly. It has already been estimated that a significant number of patients with traumatic brain injury presented with depression and psychoses of various types [8]. One study showed that after a head injury, psychoses usually had a gradual onset and a subacute or chronic course. Paranoid delusions and auditory hallucinations were the predominant features. The cases presented with schizophrenia-like psychosis had more widespread brain damage on neuroimaging, especially in the left temporal and right parietal regions, and were more impaired cognitively [9]. In our case, MRI revealed encephalomalacia in right parietal region and gliosis in right superior frontal & right parietal region. Study on head injury concluded that subjects with lesions limited to ventromedial frontal lobes tended to show more aggressive and violent behaviours compared to patients with non-frontal head injuries [10]. One interesting finding we would like to mention here that in our case no feature of psychosis in the form of delusion, hallucination and violent behaviours could be detected. We emphasize the importance of imaging of the brain and its association with psychiatric manifestations even in the absence of a history of trauma though further studies are needed with more cases to establish a correlation between encephalomalacia of various parts of the brain and type of psychiatric morbidities.

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