Case Report

Neuro-cysticercosis presenting with single delusion: A rare psychiatric manifestation

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Abstract

We report a case of multiple parenchymal neurocysticercosis in an elderly lady without raised intracranial tension which caused diagnostic confusion. The initial manifestation was only psychological as delusional disorder without any neurological symptoms or focal neurological deficit. Plain computed tomography scan showed mild bilateral periventricular and subcortical hypodensities. The development of hemiplegia during the course of psychiatric treatment prompted us to go for magnetic resonance imaging brain which clinched the diagnosis.

Key words: Delusional disorder, neurocysticercosis, psychiatric manifestation

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Introduction

Neurocysticercosis (NCC) is the most common parasitic infection of the central nervous system. Clinical presentations of NCC are often non-specific and pleomorphic.[1] NCC presenting with psychiatric manifestation is not uncommon and often causes diagnostic confusion. Studies have shown NCC presenting with depression, mania, mixed affective state, depressive psychosis or schizophrenic psychosis.[2] However, to the best of our knowledge, NCC presenting with single delusion has not been reported in the literature.

Case Report

The present case report is about a 69-year-old female of non-vegetarian food habit presented with generalized weakness, burning micturition, decreased appetite and sleep disturbance for 3 months. The onset was subacute and course progressive. She was a hypertensive, on amlodipine and atenolol. No past or family history of significant medical or psychiatric illness. She was thoroughly investigated in her native place but all results were within the normal limit. The only abnormal finding was on computed tomography (CT) scan of the brain which showed mild periventricular and subcortical hypodensities reported as old ischemic changes [Figure 1]. As the symptoms were worsening she came to our hospital for a second opinion. Investigations repeated in our hospital showed mild anemia (haemoglobin 10.9 g %) with erythrocyte sedimentation rate of 40 mm at the end of 1st hour. Rest of complete blood count, blood sugar, renal function, liver function, thyroid function, lipid profile, creatine phospho kinase and electrolytes were within the normal limit. Peripheral blood smear study and serology test for human immunodeficiency virus 1 and 2 were negative. Chest X-ray, electrocardiogram and 2D echocardiography findings were suggestive of left ventricular hypertrophy. Abdominal ultrasonography was normal. Urine routine examination was normal while urine for Bence-Jones protein and C/S were negative. Fundoscopy examination of the eye was normal. Further history revealed that the patient had lost her 50 year old son-in law 5 months back and had recent onset suspiciousness. The patient was referred to a psychiatrist at this point. A detailed psychiatry history revealed a definite change of her behavioral pattern in last 3 months characterized by suspicion against the husband. She would suspect the 75 year old husband to be having an affair and probable physical relationship with daughter-in-law. Mental State Examination (MSE) confirmed delusion of

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infidelity. She told that her husband was planning to transfer the entire property in her daughter-in-law's name. This history was shared with different family members and found to be false. There was no perceptual disturbance or depressive features as per history or on MSE. Cognitive functioning assessed through mini MSE was found to be intact. She was provisionally diagnosed as a case of delusional disorder (as we did not know about the organic etiology at that time) and started with amisulpride 50 mg which was gradually increased to 200 mg. However, during her stay in the hospital she developed difficulty in walking. A detailed neurological examination found left sided hemiplegia with power of 2/5. Contrast enhanced magnetic resonance imaging (MRI) of the brain and spinal cord was advised which revealed the presence of multiple discrete ring enhancing lesions in the brain with associated surrounding edema, lesions show central fluid signal intensities with mural T1 iso and T2 hypointense nodules suggestive of scolices inferring cerebro-cerebellar NCC [Figure 2]. The psychiatric diagnosis was changed to organic delusional disorder. Injectable dexamethasone and mannitol infusion were started and antipsychotic was continued. The patient showed remarkable improvement of both hemiplegia and delusion within 6 weeks. Dosage of amisulpride had been tapered off gradually over a period of 6 months as she was not having the delusion anymore.

Discussion

Certain atypical presentations in this case caused confusion about the organic etiology of the psychiatric disorder. Firstly, the most definite and consistent initial manifestation was suspiciousness against the husband. Other symptoms were weakness and burning micturition for which no major etiology could be found on repeated investigations. Though NCC is known to manifest as a psychiatric disorder but more often or not it is a combination of neurological and psychological manifestation. The common neurological manifestations of NCC like seizures/epilepsy; headache, focal deficits and signs of increased intracranial pressure were completely absent in this case.[3]

Secondly, the CT scan of the brain which was done approximately 1 month after the onset of symptoms showed no conclusive evidence of NCC. Histo-pathologically, there are four stages of NCC-vesicular, colloidal and granular/nodular and calcified. MRI finding in our case is suggestive of vesicular-colloid stage as suggested in the literature.[4] In the earlier stages particularly in vesicular-colloidal stage, cyst wall would be thin and the fluid is isodense with the cerebrospinal fluid. Uninflamed cysticercoids lesions may not be picked up by CT scan. In this case, the diagnosis was done by MRI. MRI is found to be superior to CT scan in diagnosing NCC especially in earlier (vesicular-colloidal) stage.[5]

Finally, the presence of a major life event like bereavement and intact cognitive function favored diagnosis of psychosis. Incidentally, before the onset of hemiplegia, there was no definitive evidence of organic etiology and a diagnosis of delusional disorder was compatible.

However, our patient was 69 years old who presented with subacute onset of illness and never had any past or family history of psychiatric illness. Secondary psychosis should always be kept in mind in any newly diagnosed psychiatric illnesses with atypical age of onset, especially after age 45; good premorbid psychological functioning, nil past/family history of psychiatric illness and with the presence of unusual temporal features such as abrupt onset, quick resolution, or rapid fluctuation; treatment resistance or unusual treatment response.[6]

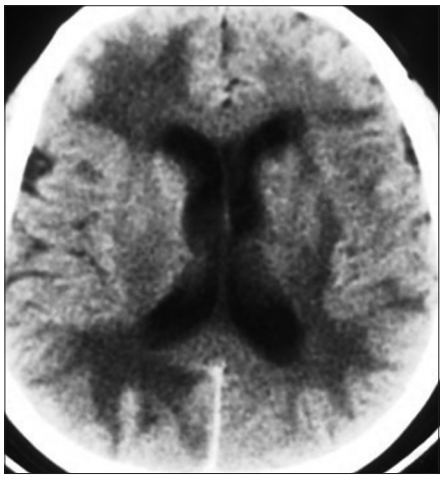

Figure 1: Plain computed tomography scan of brain showing bilateral periventricular and subcortical hypodensities

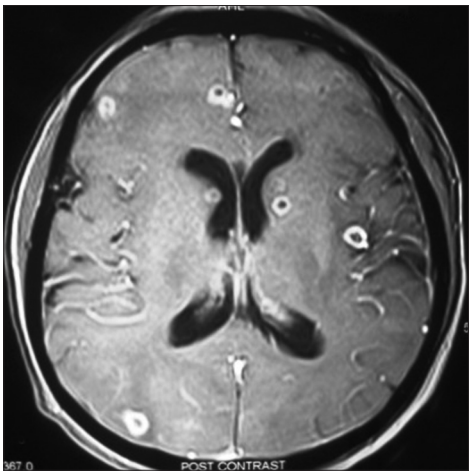

Figure 2: Contrast magnetic resonance imaging of brain showing multiple discrete ring enhancing lesions with peri-lesional edema and central fluid signal intensities suggestive of scolices

There have been case reports from India about NCC presenting as psychosis in the initial stage. Mahajan *et al*. have reported a case which was treated as psychosis for 1 year before having neurological manifestation of seizures.[7] There was another case report of NCC presenting initially with schizophrenia like functional psychosis.[8] Our case has a unique presentation with single delusion, no change in speech, affect or behavior in other aspects, intact cognition and absence of any hallucination. Further, psychiatric manifestation in the initial stage without cognitive decline or neurological symptoms is also uncommon.

In any case of newly onset psychiatric disorder in elderly people especially without past or family history of psychiatric illness, diagnosis should be kept open. Repetitive detailed neurological and systemic examination is a must and overdependence only on investigation reports should be discouraged.

References

1. Patel R, Jha S, Yadav RK. Pleomorphism of the clinical manifestations of neurocysticercosis. Trans R Soc Trop Med Hyg 2006;100:134-41.
2. Forlenza OV, Filho AH, Nobrega JP, dos Ramos Machado L, de Barros NG, de Camargo CH, *et al*. Psychiatric manifestations of neurocysticercosis: A study of 38 patients from a neurology clinic in Brazil. J Neurol Neurosurg Psychiatry 1997;62:612-6.
3. Carabin H, Ndimubanzi PC, Budke CM, Nguyen H, Qian Y, Cowan LD, *et al*. Clinical manifestations associated with neurocysticercosis: A systematic review. PLoS Negl Trop Dis 2011;5:e1152.
4. Noujaim SE, Rossi MD, Rao SK, Cacciarelli AA, Mendonca RA, Wang AM, *et al*. CT and MR imaging of neurocysticercosis. AJR Am J Roentgenol 1999;173:1485-90.
5. García HH, Del Brutto OH. Imaging findings in neurocysticercosis. Acta Trop 2003;87:71-8.
6. Cummings JL, Mega MS. Neuropsychiatry and Behavioural Neuroscience. 2nd ed. Oxford, NY: Oxford University Press; 2003.
7. Mahajan SK, Machhan PC, Sood BR, Kumar S, Sharma DD, Mokta J, *et al*. Neurocysticercosis presenting with psychosis. J Assoc Physicians India 2004;52:663-5.
8. Bhatia B, Mishra S, Srivastava AS. Neurocysticercosis presenting as schizophrenia: A case report. Indian J Psychiatry 1994;36:187-9.

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