Case Report

Changing Seizure Semiology Due to Reappearing Neurocysticercosis Granuloma– A Case Report

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Abstract

Neurocysticercosis (NCC), the most prevalent parasite infection of the central nervous system. It is rare for a patient with a resolved solitary cerebral cysticercus granuloma (SCCG) to experience a recurrence of symptoms and the common explanation for the recurrent seizures is calcific granuloma residue. We describe a patient who had recurrence of seizures and whose follow-up imaging showed total resolution of the granuloma. Repeat imaging revealed reappearance of new SCCG in the opposite cerebral hemisphere. It highlights the significance of close monitoring and the need for additional study to better understand the underlying mechanisms and optimize treatment techniques in such circumstances.

Keywords: NCC; Disappearing lesion; SCCG; Seizures.

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INTRODUCTION

Neurocysticercosis (NCC) develops from the larval stage of Taenia solium, a tapeworm.[1] In endemic areas like India Solitary cerebral cysticercus granuloma (SCCG) is a common cause of seizures.[1] Approximately 70 % of SCCGs show some degree of resolution within six months of presentation.[2]

During follow-up, most of the SCCG resolve with or without calcifications.[3-6] Furthermore, there are isolated case reports of reappearing SCCGs during follow-up.[7-10] most of them develop in the same hemisphere.

We present a case of a young patient who experienced recurrence of seizures because of reappearance of NCC lesions in different site of the brain, during a short period of follow up. This case study examines the fascinating occurrence of disappearing and reappearing lesions in NCC.

CASE REPORT

A 19 years old female presented to us with the history of seizures from last 9 months. During her first episode she experienced tingling sensation over the left upper limb followed by deviation of head and eyes towards the left side then stiffness of both upper and lower limbs followed by jerking of all limbs that lasted for 2-3 minutes and loss of consciousness for 2-3 minutes. Associated with frothing and incontinence. She had similar 2 episodes at the interval of 3 hours.

After 1week she had similar 3 episodes at the interval of 3-4 hours and each episodes lasted for 2-3 minutes. She was born of non-consanguineous parentage, normal vaginal delivery, cried immediately after birth. No perinatal complications. No history of any antecedent. Family history was nothing significant. Morphological, behavioral abnormalities were absent Neurological examination was normal. CT Scan brain was done showed right frontal region oedema and MR imaging of brain revealed small confluent ring morphology lesions in right fronto-parietal with mild perilesional edema suggestive of neurocysticercosis (vesiculo-nodular stage). [Figure 1,2]

She was treated with antiseizure medication (Oxcarbazepine) and seizures were well controlled. Repeat MRI was done after 3 months and showed complete resolution of lesion. [Figure 3] And antiseizure medication was stopped after six months. After one month she had tingling sensation in right upper limb with stiffness and abnormal movement with impairment of consciousness that lasted for 2-3 minutes. She had recurrent episodes over 2-3 days. Repeat CT was done and showed left parietal calcified lesion. [Figure 4]

Antiseizure medication Oxcarbazepine was restarted according to body weight and seizures were well controlled.

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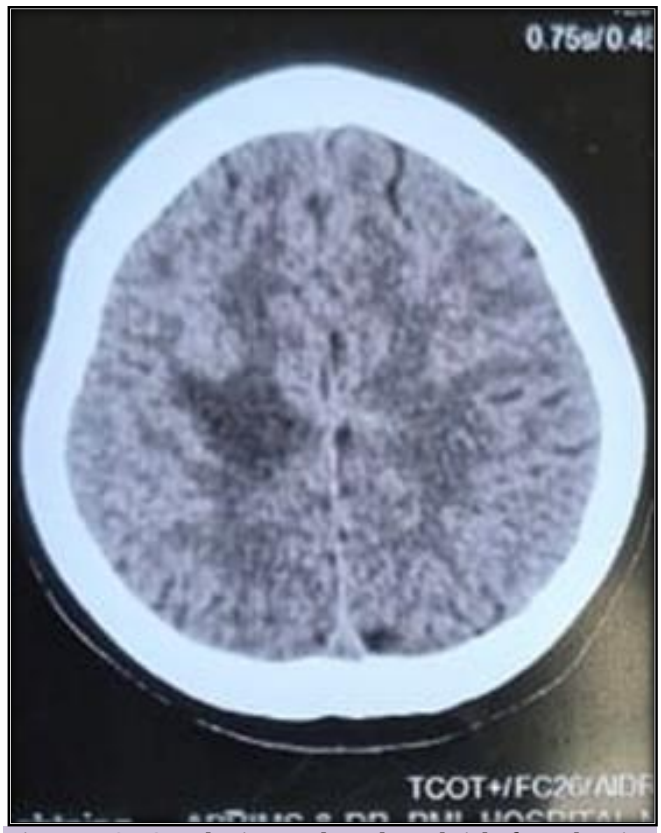

Figure 1: CT Scan brain was done showed right frontal region oedema

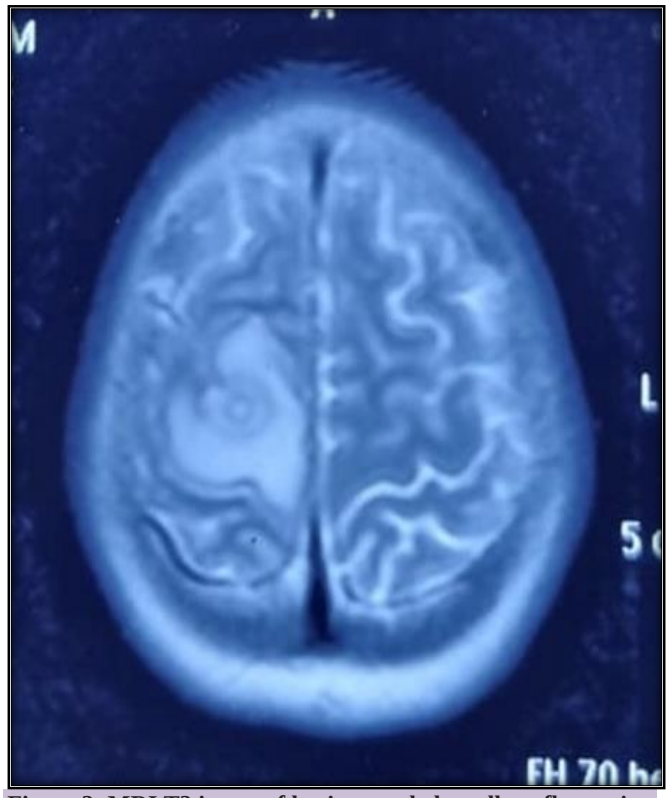

Figure 2: MRI T2 image of brain revealed small confluent ring morphology lesions in right fronto-parietal with mild perilesional edema suggestive of neurocysticercosis (vesiculo-nodular stage)

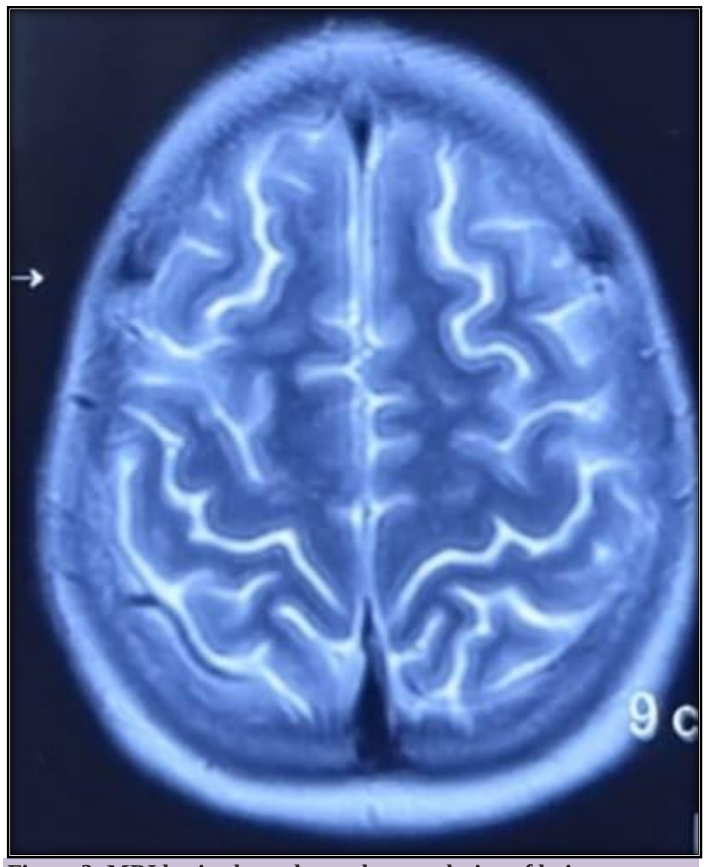

Figure 3: MRI brain showed complete resolution of lesion

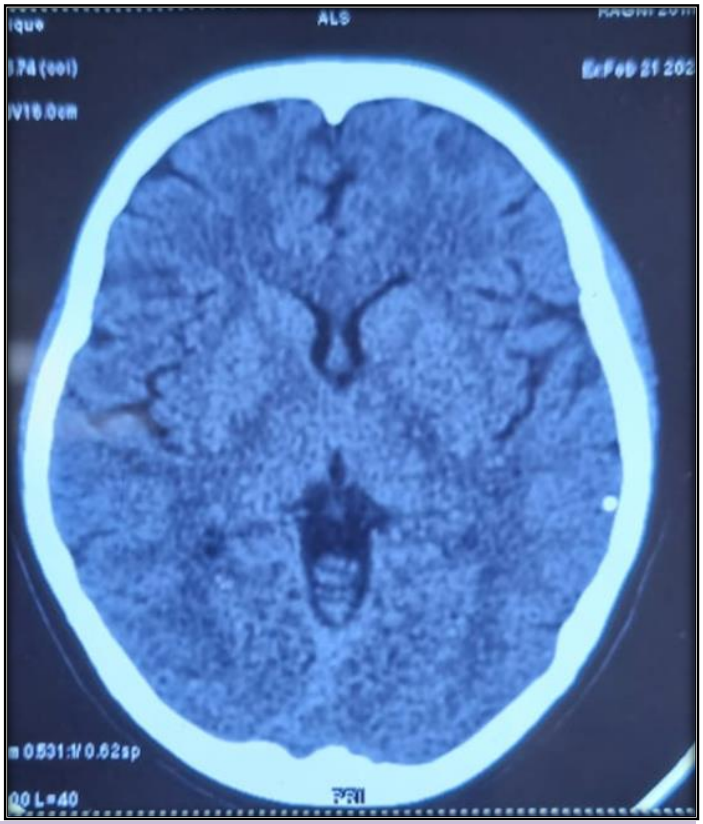

Figure 4: Repeat CT was done and showed left parietal calcified lesion

Discussion

In India, the most common imaging presentation of NCC is a SCC G with distinct enhancing lesions (SDELs), but in Latin America and Africa, multilesional appearance is more common.[11] Reappearance is an uncommon form of NCC. In this communication, we report a case who had reappearance of NCC on the contralateral hemisphere in different stage within a short span of time.

According to Sing et al,[9] four patients had CT lesions that vanished and then reappeared at the same location in three patients and at different location in one patient. They postulated that recurrent autoinfection is the cause of recurrent lesions in different locations, whereas multiple streams of cysts or viable larvae co-localize in a particular brain lesion and appear or become active at different times. In our instance, the NCC reappeared within a short interval was thought to be related with same infection and cyst maturing at different time interval.

Rajshekhar et al,[10] reported two patients with recurrent seizures and one with severe headache, all of whom had a resolved SCCG. A fresh SCCG appeared at a location different from the initial site but in the same hemisphere. These new lesions were demonstrated as the cause of the recurrent symptoms. The new lesions in all patients were again solitary lesions. This implies that neurocysticercosis is more likely to present with a single lesion than with multiple lesions in a patient who has had an SCCG in the past. This may result from a particular host-parasite interaction depending on the immunity of the individual and parasite-dependent variables, or it may have something to do with the parasite load.

Recurrent SCGs are prevalent, however they have seldom been described. For this reason, a retrospective review of 278 patients of SCCG was conducted. Findings challenged the idea of SCG resolution since 15 out of 119 individuals who had follow-up imaging had recurrences. Recurrences usually appeared where the original infection occurred, however they can also sometimes arise nearby or change in appearance. These results highlight the need for caution during follow-up since recurring SCCGs can resemble other granulomatous lesions or a persistent infection.[12]

In summary, our case is an uncommon example of NCC, in which the lesion resurfaces in a new part of the brain and reappeared as calcified lesion This incident emphasizes how erratic NCC can be and how crucial it is to continue to monitor closely, even when lesions appear to have resolved. The aforementioned incidents underscore the necessity for additional investigation to clarify the fundamental processes propelling lesion recurrence and to enhance therapeutic approaches for enhanced NCC management.

Conclusion

This case demonstrates the unpredictable clinical and radiological course of NCC, highlighting that a reappearance of a lesion, even in a different stage and contralateral hemisphere (left parietal calcified lesion after the right fronto-parietal lesion resolved), can occur within a short follow-up period. This rare presentation, which was associated with a change in seizure semiology, underscores the critical importance of continuous, close clinical and radiological monitoring in patients with resolved SCCG to guide appropriate and timely management.

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Conflicts of interest

There are no conflicts of interest.

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