Dementia and Neurocysticercosis

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Abstract

Objective: Cysticercosis is a parasitic infestation that can be seen in developing countries with poor sanitation. The infection at brain, called neurocysticercosis, is a serious form. The neurocysticercosis can manifest neuropsychiatric presentations including dementia.

Methods: In this short review, the author briefly summarizes on neurocysticercosis and dementia.

Results: In clinical practice, neurocysticercosis can manifest several neuropsychiatric symptoms. Dementia is an important neuropsychiatric manifestation to be mentioned. Many dementia patients have neurocysticercosis as underlying etiology. The problem might be unrecognized by practitioner and this can result in a delayed diagnosed, hence, the concern of the practitioner is required.

Conclusion: Since the recovery after treatment of parasitic infection is very good, early diagnosis is a critical step determining success of patient management.

Key Words: neurcocysticercosis, neuropsychiatry, dementia

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INTRODUCTION

Parasitic infestation is a common medical disorder that can be seen in any countries. Cysticercosis is a parasitic tapeworm infestation. It can be seen in developing countries with poor sanitation. This parasitic infection can present as tissue mass, which can be detectable in several internal organs[1-3]. Neurocysticercosis is caused by a tapeworm larva in the CNS. In this manuscript, the author made a short review of dementia presentation in neurocysticercosis. The specific term cysticercal dementia is used for describing the dementia, deterioration of intellectual faculties, in neurocysticerocosis patients with neuropsychiatric symptoms. This report offers the readers a clinical view or opinion of the neuropsychiatric presentations in this uncommon CNS infection disorder.

Dementia as clinical presentation of neurocysticercosis

There are several clinical presentations of neurocysticercosis. The patients can also present neuropsychiatric symptoms[4-5]. Shah and Chakrabarti reported cases of disseminated cysticercosis and noted that there were various psychiatric symptoms including delusions, hallucinations and catatonia, and cognitive

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symptoms (of those presentations, cognitive symptoms is the most frequent problem)[4]. Dementia can be an important presenting symptom of neurocysticercosis and this can be the challenging topic in psychological medicine [6]. The cysticercal dementia has its important clinical features that it can be recovered, which is different from other kinds of dementia[6]. Comparing to degenerative dementia, dementia related to neurocysticercosis can be seen in any age group whereas the elderly is the main group affected by degenerative dementia. Sometimes, the dementia might also co-manifest with other neurological presentations. A classical combination between dementia and hydrocephalus has been reported for a long time[7-9]. For those cases, the dementia is usually progressive and the seizure can also be detectable[9]. Hence, dementia related to neurocysticercosis can concurrently occur with other accompanied neuropsychiatric symptoms (seizure, hallucination, etc)[4,6]. Dementia accompanied with seizure or hydrocephalus can be the clues to consider cysticercal dementia [4,6].

The neuropsychiatric symptoms seen in neurocysticercosis are different from other parasitic neurological infestation. The neurocysticercosis has its specific clinical course. Mahieux et al. proposed for classifying of neurocysticercosis into three group due to neuropsychiatric manifestatons as "acute (parenchymatous or subarachnoid cystic infitration), chronic (chronic meningitis, obstructive hydrocephalus, progressive dementia), and sequelae (epilepsy with or without headaches)[10]." It is reported that about one-fifth of the patients with neurocysticercosis can have dementia[11]. Nevertheless, neurocysticercosis can sometimes present with pure psychological manifestations. Sometimes, only dementia is the only one observed problem. The misdiagnosis as Alzheimer's disease is possible[12].

Prevalence of neurocysticercosis in the psychiatric patients

Diagnosis of neurocysticercosis is usually problematic because the clinical diagnosis cannot be reliable and the diagnosis is usually due to the neuroimaging[13-14]. To treat neurocysticercosis, the antiparasitic drug can be effectively used if early diagnosis is done and prompt treatment is given. Focusing on diagnosis, the pathonomonic finding for clinical diagnosis of neurocysticercosis is finding of single enhancing lesions in neuroimaging investigation (CT scan or MRI) and the visualization of a scolex is the clue for confirmative diagnosis[13-14]. Therefore, in cases that the patients do not present predominant neurological deficit, underdiagnosis can be expected. There is an interesting epidemiological report that "a high prevalence of dementia in comparison with industrialised countries" can be seen in the endemic area of cysticercosis[15]. Nevertheless, the exact prevalence of neurocysticercosis in the psychiatric patients is rarely reported. This might be due to the fact that there is a lack concern on the possibility of neurocysticercosis as an underlying etiology of psychological manifestation. In a report, it was noted that delusional parasitosis (parasitosis induced delusion) can be seen in 0.62% of the hospitalized patients with neurological disorders, which is considerable high[16]. Focusing on dementia, about one-fifth of hospitalized psychiatric patients (patients presented in psychiatric department) were reported for seroposivity to cysticercosis[17]. In the patients with neurocysticercosis Ciampi de Andrade et al. recently reported that "dementia was diagnosed in 12.5%[18]." Finally, it should be noted that the phase of parasite is also relating to the presence of dementia. Focusing on chronic neurocysticercosis, of which dementia is common[10], the prevalence of dementia is also dependent on the phase of parasite. According to the report by Rodrigues et al., dementia is not detectable in neurocysticercosis patients with calcified parasites but it can be seen in 12.5% in neurocysticercosis patients with active parasites[19].

CONCLUSION

In developing countries with poor sanitation, neurocysticercosis is still an important neurological infection. Of interest, this infection can manifest several neuropsychiatric symptoms. Dementia is an important neuropsychiatric manifestation that should not be forgotten. Due to the fact that many psychiatric patients presenting with dementia have underlying neurocysticercosis and can be delayed diagnosed, the concern of the practitioner is very important. Since the recovery after treatment of parasitic infection is very good, the diagnosis is a very important step for successful management of the patients.

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