

GIANT NEUROCYSTICERCOSIS

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ABSTRACT

Neurocysticercosis is one of the common space occupying lesion of brain in Asian countries. Cysticercosis of brain can present in variable forms with or without classic scolex in cyst. As they are so common and treatable cause of new onset seizure, identification of such pathology is crucial in imaging. We are presenting a cystic lesion of brain of middle aged patient with spontaneous onset of seizure and headache. On CT scan there was large cystic lesion of white matter of right cerebral hemisphere with no perilesional edema and contrast uptake. On further imaging with MRI, there were other small lesions in left cerebrum apart from large lesion detected on CT. None of the lesions showed scolex and contrast uptake. Excisional biopsy showed the lesion to be taeniasis of brain. The albendazole and steroid therapy cured the symptom of the patient. It is one of the rare pattern of common disease.

Case Report

Male patient of age 32 years presented to OPD with history of headache for 1 year and 2 events of seizure in last 2 months. He had history of minor head injury 2 years back. Patient was walking and speaking well. On clinical evaluation, left sided limbs showed mild weakness. All other findings were within normal limit. Routine blood investigations were normal. On CT scan there was large cystic lesion in right frontal lobe measuring 5.1 cm in its largest dimension (Fig.1). It was located predominantly in white matter area. Cyst had well defined margin but no definite wall could be identified separate from the brain parenchyma. There was no detectable perilesional edema. No scolex or internal debris could be found. Provisional diagnosis of hydatid cyst of brain with differential of cystic neoplasm and porencephalic cyst was made. There was small tiny calcification noted in left cerebral hemisphere which was thought as benign calcification. MRI was done which showed large cyst as described on CT with no contrast uptake.



Figure 1: Plain CT scan head showing large cyst in right hemisphere with mass effect

Added to that, there were two small cysts (less than 1 cm) detected in left side of brain, none with scolex

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(Fig.2). Serology was done for echinococcus (hydatid) and Taenia (NCC) and it was found to be positive for tenia. So neurocysticercosis was the diagnosis for for small lesion but the larger cyst was still a diagnostic dilemma and biopsy was carried out. On microscopic analysis of cyst, it was found to be active cysticercous cyst with no significant inflammation around (Fig. 3). Patient was kept on albendazole and steroids and improving.

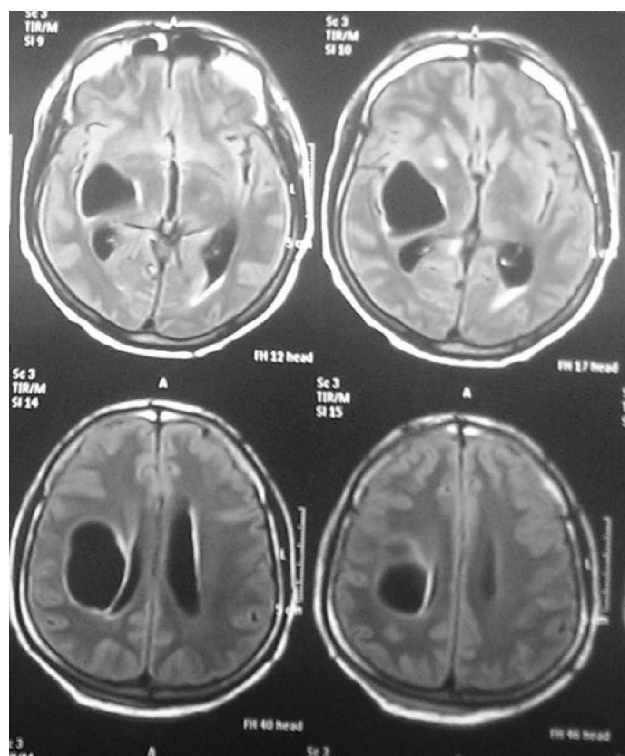


Figure 2: FLAIR image showing large cyst in right side and small hyperintense foci in basal ganglia region

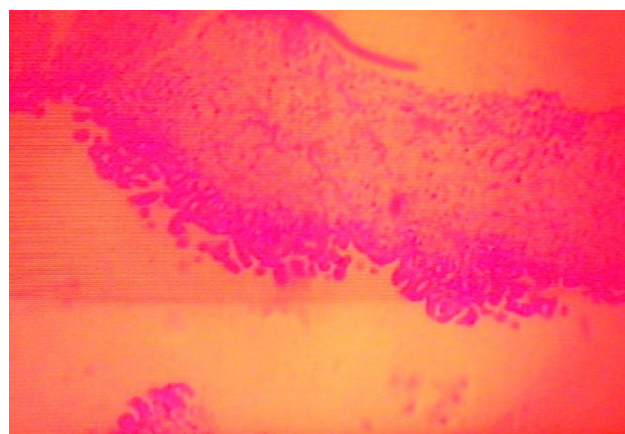


Figure 3: Microscopy of large cyst showing nondegenerated cysticercous larva

Discussion

Neurocysticercosis (NCC) is the most common parasitic infestation of brain. It is commonly found in countries where pigs are being raised. However, because of globalisation/immigration, it is of problem to developed nations also. Humans acquire the infection by ingesting undercooked food or water and act as intermediate hosts. NCC is major public health problem which can lead to focal neurological deficit and is most common cause of acquired epilepsy.¹ On imaging, they can be detected in brain parenchyma, ventricles and cisterns. Though imaging feature of intraparenchymal disease can differ depending on stage of disease, typically they are described as small (about 1cm size) cyst with thin wall with no or minimal edema with or without scolex.² Large/giant NCC is rarely diagnosed. We report a case of giant NCC.

Cysticercosis affects CNS in 50-60% cases.³ In CNS, subarachnoid space/cisterns are most commonly affected followed by parenchyma, ventricle and spine.^{4,5} Non invasive imaging play important role in diagnosis of NCC though diagnosis is based on clinical, radiological, immunological and epidemiological parameters.⁶ Serologic investigation of choice is electro-immuno transfer blot assay (EITB) which has near 100% specificity in patients with two or more cysts.⁷ Intraparenchymal NCC can manifest in different forms namely; vesicular, colloidal vesicular, granular nodular, nodular calcified. These morphologic appearance are best described in MRI.⁷ Typical intraparenchymal cyst of taenia in brain measures 5-20 mm, and will show no or little edema and no septations.^{2,8} They are usually located in gray white junction or basal ganglia and 2-4 mm scolex can be found in 50% cases.⁹

Giant NCC is rarely described in literature as cysts measuring more than 4 or 5 cm in its largest dimension.¹⁰ Giant NCC was not considered in our patient after CT evaluation as giant NCC are not encountered much in clinical practice. When scolex is not identified, other differential like hydatid cyst, cystic tumor and porencephalic cysts are rather thought as diagnosis. There was mass effect so porencephalic cyst was not kept in provisional diagnosis. After MRI other tiny cysts were also detected, so NCC was also kept in differential and so immunology done. Scolex may

not be detected always as slice thickness, size and direction of section plane all can affect their demonstration.¹¹ As NCC is very common in our part, even in patient with large cyst with no scolex, NCC should be considered in differential diagnosis.

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