A CASE OF DISSEMINATED NEOCYSTICERCOSIS - CASE REPORT

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Abstract: Cysticercosis is caused by Taenia solium infestation. Cysticerci can found anywhere in the body, but are most commonly detected in brain, cerebrospinal fluid, skeletal muscle, subcutaneous tissue, eye. However Disseminated Neurocysticercosis is rare. Neurocysticercosis typically present with new onset seizures. Here we are presenting a case of disseminated Cysticercosis in a 25yr old male presented with minimal symptoms who had imaging, serological evidence of multiple vesicular staged Neurocysticercosis. We also demonstrated histopathological evidence of Cysticercosis in the muscles. We are presenting this due to florid extensive nature of brain parasitic invasion in a minimally symptomatic patient.

Keyword: Cysticercosis Neurocysticercosis parasitic-myositis, brain cysts.

A 25yr old male lorry driver by occupation presented with complaints of Headache of 6 weeks duration. Patient has Headache that was diffuse in distribution, intermittent throbbing quality initially, but patient having dull ache since 2 weeks. No specific time / diurnal variation and the pain is adequately relieved on taking analgesics. Patient also had history generalized myalgia for the past one month. There was however no history of altered sensorium; nausea; vomiting. No history of seizures, memory disturbances, diplopia, dysphagia, weakness of limbs, loss of sensation, in-coordination, bowel and bladder disturbances.

Personal history: not a smoker or alcoholic. takes mixed diet, used to take pork and beef often.

General physical examination revealed no significant abnormalities and System examination did not reveal any significant cardiovascular and respiratory abnormal findings. His central nervous system examination was also normal including fundus. Patient was previously prescribed analgesics, which although provided temporary relief failed to prevent the frequent headaches. Basic investigations like complete blood count and renal function test were normal. ECG and chest x ray was normal. In view of persistent symptoms computed tomography (CT) of brain was done. CT imaging revealed a single hypo-dense lesion in the left temporal lobe (figure 1). Since the other sections of ct brain did not revealed any significant lesions those sections were not photographed.
Magnetic resonance imaging (MRI) of brain revealed

A) T2 FLAIR sequences revealed multiple bilaterally distributed punctuate hypodense lesions in cerebral hemispheres, midbrain & Pons. A single large hypodense cystic lesion in the left temporal lobe, with eccentric nodule within the cyst (Figure 2A). B) Few punctuate lesions in T2 sequence show ‘dot in hole’ appearance characteristic of Neurocysticercosis (Figure 2B). C) T2 sequence show fluid filled cystic lesions, multiple small & a single large lesion (Figure 3A). D) T2 hyperintense fluid filled cysts noted in the posterior neck muscles (Figure 3B)

FINAL REPORT- SUGGESTIVE OF NEUROCYSTICERCOSIS
In view of lesions present in posterior neck muscles we planned to do a biopsy of neck muscle, however Patient did not gave consent to biopsy the lesions in the neck muscles but he gave consent to do a similar biopsy in his thigh, we biopsied a 1 X 1 cm muscle tissue from the right quadriceps with the help of surgeons.

**Biopsied specimen was reported as**

Macroscopic: skeletal muscle tissue 1cm X 0.7 cm with a cystic lesion observed.
- Microscopy: skeletal muscle fibers noted with parts of cystic inflammatory lesion consistent with cross sectional scolex noted with peri-lesional inflammation with Eosinophilic infiltrate with intra scolex features consistent with mouth parts with no evidence of hooklets. (Figure 4)

Final impression: Cysticercosis and Parasitic myositis. Further evidence of Cysticercosis was obtained by Enzyme-linked immunoelectrotransfer blot assay using purified extracts of Taenia solium antigens (EITB) which was strongly positive for anti-cysticercal IgM-1.17 units, and IgG antibodies- 9.64 units; (normal less than 0.9 units, positive more than 1.1 units). His serum creatinine phosphokinase CPK levels were also significantly elevated-673.0 U/L (normal in male upto 190 U/L). Further imaging with several plain radiographs did not reveal any subcutaneous calcifications.

**NEUROLOGIST OPINION**


**NEUROLOGIST REVIEW** with MRI brain, histopathology and serological report-opined as parenchymal neurocysticercosis with dissemination. Advised to start Tab, Albendazole 400mg OD with injection dexamethasone and then taper with oral steroids.

The characteristic imaging evidence of Cystic lesions showing the scolex on MRI and Positive serum Enzyme-linked immunoelectrotransfer blot assay using purified extracts of Taenia solium antigens (EITB) for the detection of anticysticercal antibodies point to the diagnosis of parenchymal Neurocysticercosis with parasitic myositis. The patients was managed with steroids followed by Albendazole. Patient improved well and now free of symptoms.

**DISCUSSION:**

Neurocysticercosis (NCC) can be either Parenchymal or extra-parenchymal. The most common manifestation of neurocysticercosis is new onset seizures with or without secondary generalization. Cysticerci can present with focal deficits and when present in subarachnoid or ventricular space can produce interference to CSF flow. There are four stages of cysts in the brain parenchyma in Neurocysticercosis: vesicular, colloidal, nodular/granular, and calcified granulomas. Vesicular cysts are viable larval stages, seen on CT and MRI with minimal enhancement due to lack of host immune response, at this...
stage scolex is seen as an eccentric nodule within the cyst. As the cyst degenerates fluid leak from the cyst into surrounding parenchyma and generate intense immune or inflammatory response, which is visualized on contrast CT as enhancement. This enhancing cyst without a scolex is colloid cyst\(^5\). On MRI, vesicular cysts appear with signal properties similar to those of CSF in both, T1-and T2-weighted images. The scolex is usually visualized within the cyst as a high intensity nodule giving the lesion a pathognomonic 'hole-with-dot' imaging. Sometimes, these parasites are so numerous that the brain resembles a "Swiss cheese". The MRI picture in our case depicts pathognomonic feature characteristic of vesicular stages of neurocysticercosis. Evidence for diagnosis of 'Definitive Neurocysticercosis' is further contributed by serological detection of anticysticercal antibodies and histologic evidence of parasitic myositis\(^6\). Treatment of neurocysticercosis depends on the viability of the cysts and its complications. Management includes symptomatic treatment as well as treatment directed against the parasite. Albendazole and praziquantel are the two anticysticercal drugs commonly used. Steroids should be given in prior to anticysticercal agents to avoid the inflammatory response cause by death of parasites.

REFERENCES
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