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RESEARCH ARTICLE

NCC CAUSING HYDROCEPHALUS; A CASE REPORT

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ABSTRACT

Neurocysticercosis is the commonest parasitic central nervous infection world-wide.(1,2,3,4) It is a public health problem in India . It has a wide population distribution in the world and affects children as well as adults. (1,2,3,4,5). It is the most common helminthic infection of the nervous system and is endemic in most underdeveloped countries as well as in industrialized nations. It is estimated that approximately 50,000 people die every year from neurocysticercosis (NCC) worldwide.

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INTRODUCTION

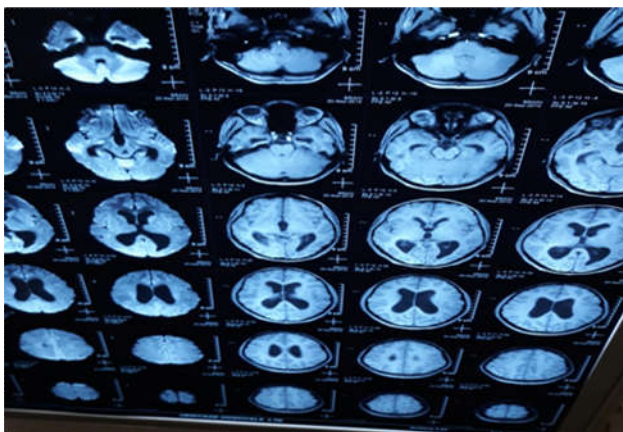
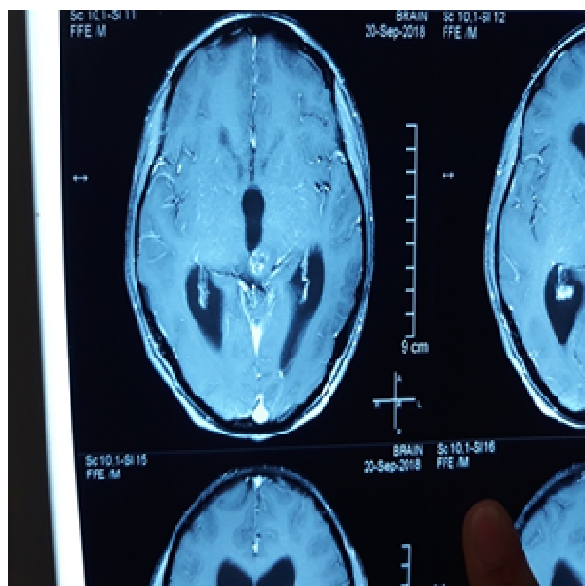
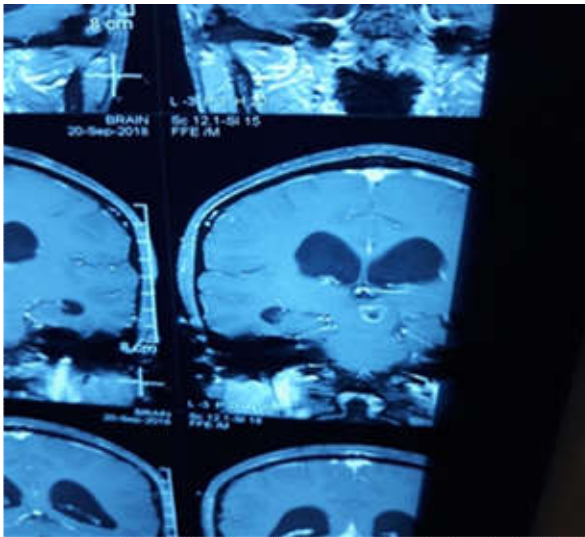
It is spread by fecal-oral contamination with *T. solium* eggs along with a poor hygiene practices in food handling by tapeworm carriers. Once exposed to gastric acid and bile, infective oncospheres are released in the upper small intestines of the human host & penetrate the intestinal wall, and then disseminate throughout the body, including the central nervous system (Singh et al., 2018; Singh et al., 2018; Zee, 1993). Seizures (50-80%), along with headache and impaired vision are common clinical presentations of NCC and leading causes of morbidity. Seizures can be partial /focal, generalized or rarely myoclonus and acquired epileptic aphasia, Dementia, learning difficulties and changes in cognition are often secondary sequelae in humans with NCC (Singh, 2018; Singh, 2018; Román et al., 2000; Lobato, 1981; Raccurt, 2009; Bouree, 2006). Hydrocephalus is caused by either cerebrospinal fluid (CSF) pathway blockade by ventricular cysts and/or inflammatory ependymal/arachnoidal changes (Monteiro, 1993; Matushita, 2011). It can be treated by removal of the intraventricular cysts and/or CSF shunting, or endoscopic ventriculostomy (Apuzzo, 1984; Sotelo, 1990).

Although cysticidal drugs have proven effective, neurosurgical resection is necessary in cases of intraventricular cysts, giant subarachnoid cysts (usually located within the lateral fissure), or compressive cysts at the spinal level (Ahmad, 2007). Most lesions are intracranial, and spinal involvement is rare. We describe here in a case of neurocysticercosis (NCC) in the brain leading to symptomatic acute hydrocephalus.

Case report

We report a case of hydrocephalus in a 11 years old male child who presented with headache, diminished vision nausea, and balance disorders of 45 days duration along with seizure disorder (partial with secondary generalization). He was a student, and son of serving soldier who was in charge of butchery (animal slaughter house). Clinical examination revealed giddiness. Ophthalmological examination revealed pupillary edema. Computed tomography (CT) scan and magnetic resonance imaging (MRI) of the head disclosed obstructive hydrocephalus related to a multi loculated mass in the lower recess of the fourth ventricle. Immunological blood tests for cysticercosis were not carried out. This child was managed conservatively with steroids, albendazole and antiepileptic(carbamezapine 20 mg/kg). Steroids were the first to be started and three days after starting steroids albendazole in dosage of 15mg/kg was started and continued for a duration of four weeks.

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Figs 1,2 &3; CT Brain showing NCC& Hydrocephalus. Hydrocephalus can result from obstruction of the ventricles by a parasitic cyst located in the fourth (53%) or third (27%) ventricles. Cysts are less frequent in the lateral ventricles (11%) and aqueduct (9%)

Antiepileptic were continued for a period of 2 years. Surgery was done along with medical treatment was given. Child responded very well with abatement of symptoms. Repeat fundoscopy revealed regression of pupillary edema with control of seizures. Repeat CT scan revealed no residual lesions.

DISCUSSION

This Case indicates that hydrocephalus can result from obstruction of the ventricles by a parasitic cyst located in the fourth (53%) or third (27%) ventricles. Cysts are less frequent in the lateral ventricles (11%) and aqueduct (9%). In this mechanism, hydrocephalus is revealed by signs of raised intracranial pressure such as headache, vomiting, and visual disturbances (Monteiro, 1993). Cysticercosis usually affects the subcutaneous or muscular tissues, liver, lungs, or eyes. The nervous system is affected in nearly 4% of cases, and NCC constitutes the most frequent parasitic infection of the nervous system. Most lesions are intracranial. In most cases the spinal lesions are associated with other lesions of the nervous system (Zee et al., 1993). Hydrocephalus occurs in nearly 30% of NCC patients (Lobato et al., 1981; Matushita, 2011) Our three cases illustrate three distinct mechanisms.

The mean duration of signs and symptoms before diagnosis ranges from a few months for patients with ventricular cysts to few years for patients with ventriculitis/arachnoiditis. This discrepancy is explained by the symptoms worsening rapidly as a cyst reaches a critical size to cause obstruction of CSF pathways, while in "ventriculitis" cases the symptoms are due to a slowly evolving inflammatory process.

Conclusion

NCC should be considered as a possible cause of hydrocephalus. In cases of tetra ventricular hydrocephalus without intracranial explanation, MRI of the spine is mandatory to search for intra spinal lesions.

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