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Neurocysticercosis – A Rare Differential Diagnosis of Postpartum Eclampsia

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ABSTRACT:

Seizures in postpartum period usually result from eclampsia, epilepsy or centrals nervous system disorders. Neurocysticercosis is a rare, but an important, cause of first-time convulsions in postpartum period. Here we report a case of 22 year old women with neurocysticercosis presenting in the fourth postnatal day with convulsions. This case highlightsNeurocysticercosis should be considered in postnatal women presenting with seizures which cannot be explained by eclampsia.

Key words: Neurocysticercosis, postpartum eclampsia, convulsions.

Introduction:

Seizures in postnatal period usually result from eclampsia, epilepsy or central nervous system disorders. Neurocysticercosis, although rare, is an important cause of first-time convulsions in postnatal peiod.Neurocysticercosis is the most common helminthic (tapeworm) infection of the brain worldwide.

Neurocysticercosis is usually misdiagnosed as eclampsia in pregnancy as well as in early postpartum period and can be differentiated by imaging studies. Magnetic response imaging (MRI) is superior to a computed tomography (CT) scan in diagnosis and follow-up studies.The signs and symptoms range from a single seizure to coma and death. It can be treated with minimal interruption to the course of the pregnancy and medical treatment is effective in most cases although surgery may be indicated for a few women. Here we report a case of 22 year old women with neurocysticercosis presenting in the fourth postnatal day with convulsions and managed medically.

A Case Report:

A 22-year-old para 2 live 2 [P2L2], post-partum [day 4], presented in casualty during emergency hours with h/o convulsions 2 episodes, one on day 4 of her full-term vaginal home delivery. She presented to the Emergency Department on day 4 with generalised tonic-clonic seizures preceded by nausea and headache. She developed weakness of her both lower limbs followed by this seizure. There was no previous history of similar seizure episode. Her antenatal period was uneventful.There was no history of fever, tinnitus or neck rigidity, visual disturbances.

On examination, Glasgow Coma Scale (GCS) was 8/15 with normal peripheral neurological reflexes and equally reacting pupils. She had pulse rate of 114 beats/min, blood pressure of 130/90 mmHg , and SPO2 (oxygen saturation) of 98% on 5 L/min oxygen. Chest and abdominal examination were normal. We Obstetricians thought of it to be a case of post-partum eclampsia but since she presented with seizures for the first time after 4 days of delivery, neuro physician's advice was sought for. Routine investigations showed a haemoglobin of 10 g/dL, white cell count (WCC) of 8 × 109/L, platelets of 102 × 109/L, normal urea, electrolytes, clotting, liver function tests, uric acid and no proteinuria, fundus examination were normal. A MRI scan was advised. To our surprise it revealed a spherical ring enhancing lesion in Left parietal lobe diagnostic of Neurocysticercosis- stage 3.

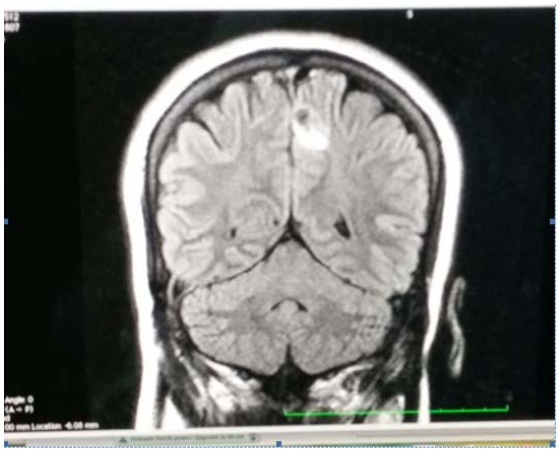


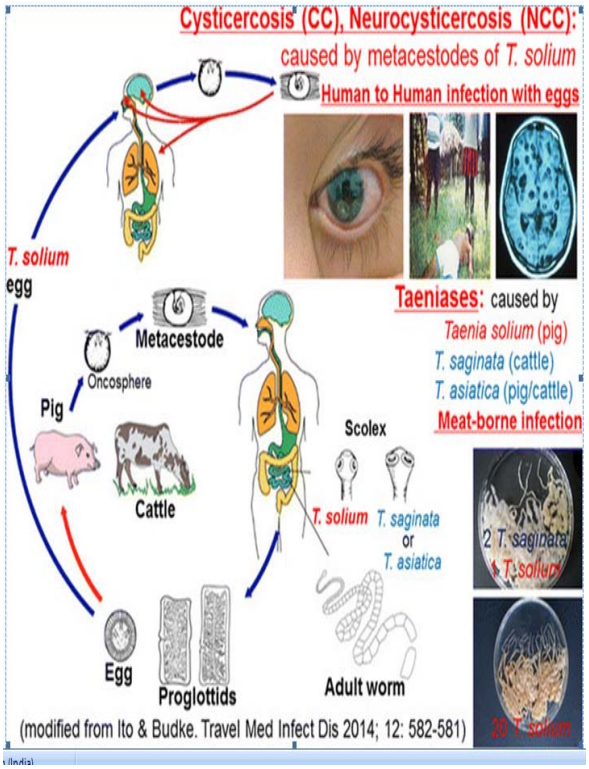
Figure 1: MRI scan image.

Our patient was treated with inj phenytoin 100mg IV for 3 days later shifted to oral medication, Tab. Albendazole 400mg bd, Tab. Prednisolone. After 3 days she recovered from her lower limb weakness and was able to walk normally. As she was not having any features of hydrocephalus or obstructive symptoms, medical management preferred. After 10 days she got discharged with oral anti epileptics as per neurophysicians advice and to come for follow up.

DISCUSSION

Convulsions during pregnancy reported to an obstetrician are mainly due to eclampsia. Marginally raised blood pressure and +1 urine albumin may be present in acute stages of convulsions. A complete and continuous evaluation is crucial to differentiate eclampsia from other disorders. When atypical features are present, or clinical status worsens, neuroimaging is important.

Cysticercosis refers to tissue infection after exposure to eggs of Taenia solium, the pork tapeworm.



The disease is spread via the fecal-oral route through contaminated food and water, and is primarily a food borne disease. After ingestion the eggs pass through the lumen of the intestine into the tissues and migrate preferentially to the brain and muscles. There they form cysts that can persist for years. In some cases the cysts will eventually cause an inflammatory reaction presenting as painful nodules in the muscles and seizures when the cysts are located in the brain.

Symptomatic disease from Taenia solium cysts in the brain is referred to as neurocysticercosis and is the most common helminthic (tapeworm) infection of the brain worldwide. The life cycle involves humans as a definite host and pigs as an intermediate host. Infections with cysticercus occur after humans consume the ova from exogenous sources or through self-infection via the fecal-oral route. Humans, in this case, are intermediate hosts. Ova are digested in the stomach and release oncospheres which penetrate the intestinal wall and reach the bloodstream. These oncospheres develop into cysticerci in any organ but are common in brain, subcutaneous tissue, or eyes. The term neurocysticercosis is generally accepted to refer to cysts in the parenchyma of the brain. It presents with seizures and, less commonly, headaches. The diagnosis of neurocysticercosis is mainly clinical, based on a compatible presentation of symptoms and findings of imaging

Criterion
Absolute
Histologic demonstration of the parasite from biopsy of a brain or spinal cord lesion
Cystic lesions showing the scolex on CT or MRI
Direct visualization of subretinal parasites by fundoscopic examination
Major
Lesions highly suggestive of neurocysticercosis on neuroimaging studies
Positive serum immunoblot for the detection of anticysticercal antibodies
Criterion
Resolution of intracranial cystic lesions after therapy with albendazole or praziquantel
Spontaneous resolution of small single enhancing lesions
Minor
Lesions compatible with neurocysticercosis on neuroimaging studies
Clinical manifestations suggestive of neurocysticercosis
Positive CSF ELISA for detection of anticysticercal antibodies or cysticercal antigens
Cysticercosis outside the central nervous system
Epidemiologic
Evidence of a household contact with T. solium infection
Individuals coming from or living in an area where cysticercosis is endemic
History of frequent travel to disease-endemic areas

Diagnostic criteria for neurocysticercosis[a]

[a]CSF, cerebrospinal fluid; ELISA, enzyme-linked immunosorbent assay.

These criteria provide two degrees of diagnostic certainty:

Definitive diagnosis, in patients who have one absolute criterion or in those who have two major plus one minor and one epidemiologic criteria;

Probable diagnosis, in patients who have one major plus two minor criteria, in those who have one major plus one minor and one epidemiologic criteria, and in those who

have three minor plus one epidemiologic criteria.

Imaging

Neuroimaging with CT or MRI is the most useful method of diagnosis.CT scan shows both calcified and uncalcified cysts, as well as distinguishing active and inactive cysts. Cystic lesions can show ring enhancement and focal enhancing lesions.

Neurocysticercosis: Management

Neurocysticercosis most often presents as hydrocephalus and acute onset seizures, thus the immediate mainstay of therapy is emergent reduction of intracranial pressure and anticonvulsant medications. Antiparasitic treatment should be given in combination with corticosteroids and anticonvulsants to reduce inflammation surrounding the cysts and lower the risk of seizures.

CONCLUSION

Many patients having postpartum convulsions do not experience preeclampsia, hence clinical awareness is essential for early treatment and care.

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CONFLICT OF INTEREST – Nil

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