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Case Report

A CASE OF SEIZURE DISORDER (NEUROCYSTICERCOSIS) IN PREGNANCY

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ABSTRACT

Neurocysticercosis (NCC) is rare in pregnancy and is associated with one third of seizure disorder in endemic areas. The present case report is about the successful Fetomaternal outcome in a known case of NCC. She was irregularly on antiepileptic medications and admitted in emergency with episodes convulsion. Subsequently she was discharged after stabilization and later had an uneventful vaginal delivery after about a month.

KEY WORDS: neurocysticercosis, seizure disorder, pregnancy

INTRODUCTION

Neurocysticercosis, a rare disorder during pregnancy, is caused by **larva of Taenia solium** parasite, the infection most probably is caused by consumption of uncooked or partially cooked pork infested with these larvae. This affects the central nervous system (CNS) predominantly. This disorder is endemic in Asian countries like India, China, Nepal [1,2]. Neurocysticercosis (NCC) is associated with nearly one-third of seizure disorders in endemic areas and an estimated 50 million people worldwide have the infection [3].

CASE

A 20 years old housewife, resident of Gopiballavpur, Kalyani, 2nd gravida, having a non-consanguineous marriage, belonging to lower socioeconomic class had attended Emergency Room of the hospital on 05/04/2022 at 11AM with chief complaint of 2 episodes of self-terminating fits on the same morning, each episode lasting for 10-15 minutes, preceded by headache and dizziness. The patient had a history of 7 months of amenorrhea.

Patient had menarche at 13 years of age. She used to have irregular menstrual cycle where bleeding lasting for 4-5 days every 32 days with mildly painful moderate flow.

Her last menstrual period (LMP) was on 31/08/2021 and expected date of delivery was on 07/06/2022.

No history of use of contraceptive measures.

Patient was married for 4 years, G_2 T_0 P_0 A_1 L_0.

She has a history of abortifacient intake at 5 weeks of gestational age 1 year back for which dilatation and evacuation (DnE) was done.

Patient has history of similar episodes of seizures occurring since last 5 to 6 years at irregular intervals. Each episode usually used to last for 15 minutes preceded by headache and giddiness. She used to experience stiffness all over her body occurring during fits, followed by disorientation, confusion and forgetfulness with recent memory loss. She is a known case of **Neurocysticercosis** diagnosed by medical professional having history of partially uncooked pork consumption since childhood. She was put on **tab. Phenytoin (100) OD** since then by the treating physician and **tab**. **Albendazole (400) TDS** for one month as per shown by patient. No history of diabetes mellitus/ hypertension/tuberculosis or any heart disorders.

History of 2 to 3 similar episodes of fits experienced by her father for which he was taking an unknown medication. No history of

hypertension/ diabetes mellitus or any psychiatric disorder in family. Patient experienced decrease sleep due to continuous headache and giddiness. Bladder-bowel habits were normal. No history of alcohol or tobacco consumption.

She conceived spontaneously after 4 years of marriage and her last menstrual period was on 31st August 2021. Pregnancy was detected after 4 months of amenorrhea i.e. at 21 weeks 5 days of gestational age. Till then as the pregnancy was unknown, she was consuming her previous medications i. e. tablet phenytoin irregularly and after the pregnancy detection, it was stopped but no other antiepileptic was started for her. Fetal anomaly scan showed intrauterine single life pregnancy of 21 weeks of gestation age with no gross congenital anomalies. Patient was unbooked with no ANC follow up. She was not consuming Iron folic acid or calcium tablets during pregnancy. Just received one dose of intramuscular injection tetanus. Pregnancy was uneventful till 31 weeks of gestation age when patient sought medical care for 2 episodes of generalised tonic clonic seizures. On admission, pulse BP and all other vitals were within normal limits.

The patient was immediately started on **Injection Magnesium sulphate** 4 gm 20% intravenous with 10 gm 50% deep intramuscular as Loading dose Followed by maintenance dose of 5 gram 50% 4 hourly deep intramuscular in alternate buttocks for 24 hours. Urine output, respiratory rate, deep tendon reflexes were within normal limits up to the last dose but her last dose was omitted due to absent of knee jerk. Serum Mg^{++} levels were found to be 2.0 mg/dl. She was consuming Tablet Phenytoin irregularly in spite of omitted by medical practitioner earlier, that was stopped. She was then shifted on **tablet Leveteracetam 500 OD** and was given propped up position as per advised by general medicine department of the hospital. The foetus being pre-term, **injection dexamethasone 12 mg 2 doses 24 hourly** were initiated. Patient and her relatives were counselled for high-risk pregnancy and undetected congenital fetal anomalies which might be present due to Tablet phenytoin consumption during organogenesis period.

Her **MRI brain** was done on very next day on 06/4/2022 after stabilizing the patient. MRI showed classical appearance of **multiple rings enhancing lesions** all over her brain. Advice from medicine department was taken. They suggested to complete her corticosteroid doses and **no Anti-Helminths were introduced** at this point. **EEG electroencephalogram** was done on 07/04/2022 which showed no abnormalities. **Ophthalmoscopic fundal examination** was done by ophthalmology department on 07/04/2022 showing no signs of papilledema or hypertensive retinopathy. Routine blood reports showed no abnormalities which were as follows:

CBC		
Haemoglobin	8.9	gm/dl
WBC	11,000	mm^3
Neutrophils	70	%
Lymphocytes	25	%
Monocytes	04	%
Basophils	00	%
Eosinophils	01	%
Platelet	4.2 L	mm^3

Liver Function Test (LFT)		
SGPT	40	IU/L
SGOT	38	IU/L
ALP	140	IU/L
Bilirubin Total	0.7	mg/dl
Direct	0.4	mg/dl
Indirect	0.3	mg/dl

Renal Function Test (RFT)		
Blood urea	13	mg/dl
Creatinine	0.3	mg/dl

CRP	8.0	mg/dl
Serum Na^+	138	mmol/L
Serum K^{++}	4.0	mmol/L

Arterial Blood Gas ABG analysis was done on the same day. It showed decreased level of arterial K^+ and Ca^{++} For which she was started on **injection Calcium gluconate 10% 10 mg intravenously** and **injection KCl via intravenous route. Serology** such as HbsAg, Anti HCV, VDRL, HIV 1 and 2 were non-reactive.

Serial **Antenatal ultra-sonographies** for fetoplacental profile were done. USG on 09/04/22 showed Single live Cephalic foetus with maturity of 30 weeks 5 days, placenta anterior grade 2 AFI 10 cm, liquor adequate, colour doppler within normal limits, FHB 142 bpm, FWT 1665 grams.

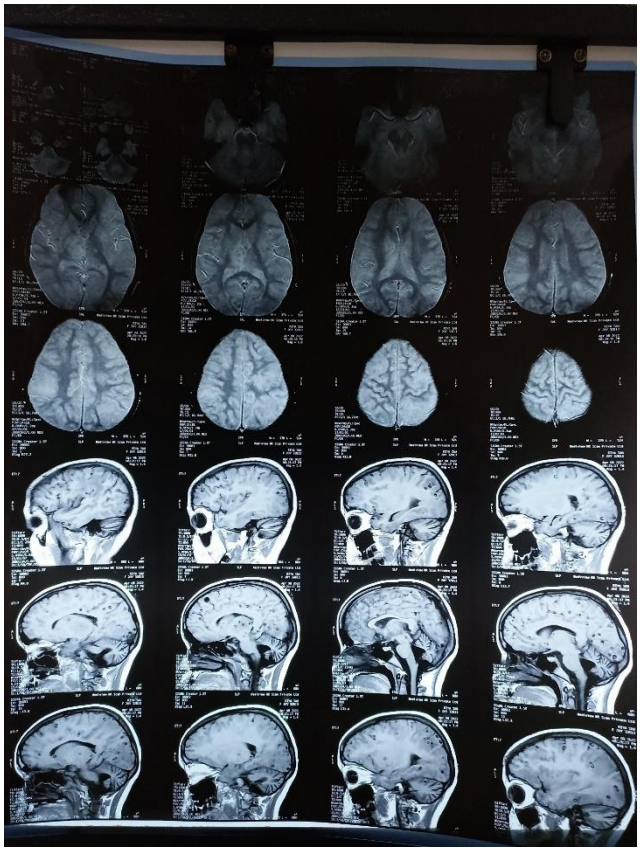
Patient was stabilised and was hospitalised for 10 days in ICU after that we planned her discharge with USG (13/4/2022) showing single life Cephalic foetus with maturity of 29 weeks 6 days, FHB 142 bpm, FWT 1492 grams, placenta anterior grade 2, liquor adequate, AFI 7 cm., colour Doppler within normal limits. Patient was advised to continue tablet Levetiracetam and keep noticing for daily fetal movement count and was also advised to follow up regularly in ANC clinics which she did. She was referred to a superspeciality hospital with neurology unit for further management after discharge.

Patient had an **uneventful normal vaginal delivery** with episiotomy on 16/05/22 of baby girl with weight 2215 grams. 1 min and 5 min APGAR scores of the baby were 9 and 10 out of 10 respectively. No congenital anomalies noted and required no SNCU admission. Baby was administered injection Vitamin K dose and the birth doses of Hepatitis B, Polio (OPV), BCG vaccines. Exclusively breast feeding was started immediately after the delivery. No episode of post-partum haemorrhage was noted.

This was the case of neurocysticercosis in pregnancy where symptoms were successfully controlled with antiepileptic agents. Cyst eradication therapy was avoided due to potential worsening of symptoms which would have posed a threat to both mother and foetus.

DISCUSSION

Most pregnancies in women with NCC are associated with good pregnancy outcomes and there is no study suggests that maternal NCC itself causes fetal malformations or brain damage. However, sustained seizures may pose a major risk to the foetus due to hypoxia [4]. The drugs like Valproate, though may have the risk of congenital malformations specially if consumed during organogenesis period but not always[5]. This patient too had episodes of convulsions in the antenatal period and the



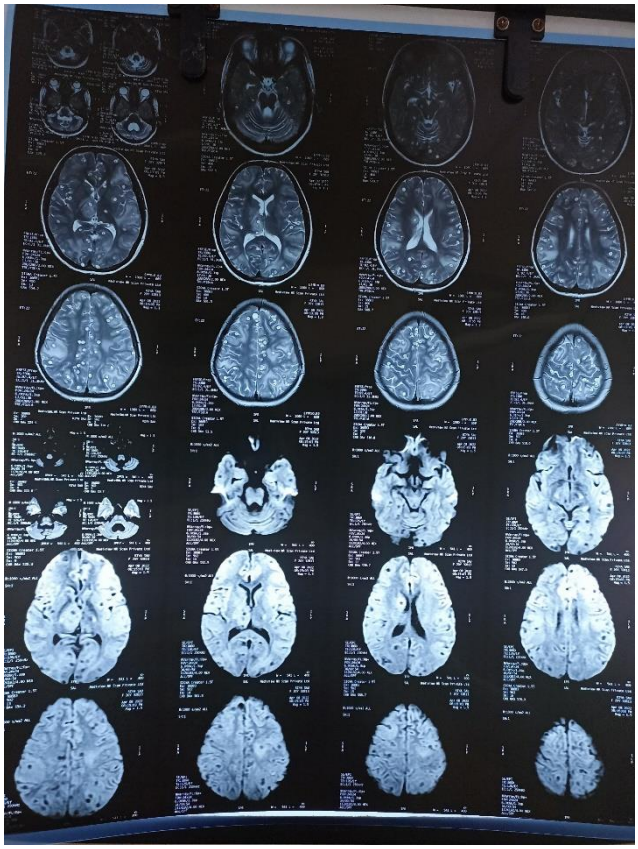
possible explanation is likely due to irregular intake of antiepileptic drugs. This in turn might have avoided the anomalous transformation in the foetus. Follow up and management during pregnancy can be challenging, but prompt interventions are crucial for better maternal and foetal outcomes. Women with new onset seizures between the second trimester and the postpartum are often considered to have Eclampsia. However, in the absence of high blood pressure or other signs of preeclampsia, a differential diagnosis must be suspected and neuroimaging should be advised particularly for women at risk of transmission specially those who are residents of endemic area. Appropriate history taking especially family history and personal history are the key factors for suspecting the diagnosis of NCC. Antiepileptic medications such Leveteracetam which are safer in pregnancy, should be started to avoid seizure recurrence during pregnancy for the wellbeing of mother and her baby.

CONCLUSION

Neurocysticercosis is a very rare disorder in pregnancy. Diagnosis depends on a high degree

of suspicion. Management is difficult and prognosis is guarded especially in patients with recurrent convulsions leading to fetal hypoxia. However, it is a relief that NCC in pregnancy is associated with good feto- maternal outcome.

MRI plates of the patient (07/04/2022)



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