World Journal of Pharmaceutical Sciences
ISSN (Print): 2321-3310; ISSN (Online): 2321-3086
Available online at: http://www.wjpsonline.org/
Case Study

Trabeculoma Induced Epilepsy: A Case Study

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Received: 30-08-2018 / Revised Accepted: 28-09-2018 / Published:30-09-2018

ABSTRACT

Tuberculosis is an infectious disease caused by the bacilli Mycobacterium tuberculosis. It commonly affects the lungs, pulmonary TB but can also affect other sites, extra pulmonary TB. A male patient of age 74yrs was admitted on emergency with complaints of continuous GTCS of 20-25 episodes without regaining of consciousness with history of Anti Tubercular Therapy for 8 months. Trabeculoma induced seizures was confirmed by radiologic investigation and similar report. The drugs are selected based on its efficacy. Here, T. Phenytoin 100mg twice daily, T. Lacosamide 100mg twice daily, T. Levetiracetam 750mg twice daily was given for treating the patient. Even though the seizure was induced by the formation of trabeculoma, antiepileptic drugs were given to the patient to prevent seizure recurrence.

Keywords: Mycobacterium, Trabaculoma, Epilepsy

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How to Cite this Article: Dr. Vishnu Das. Trabeculoma Induced Epilepsy: A Case Study. World J Pharm Sci 2018; 6(10): 14-16.

INTRODUCTION

Tuberculosis is an infectious disease caused by the bacilli Mycobacterium tuberculosis. It commonly affects the lungs, pulmonary TB but can also affect other sites, extra pulmonary TB. In worldwide, Tuberculosis is the ninth leading cause of death and due to a single infectious agent, ranking above HIV/AIDS. In 2016, there were an estimated count of 1.3 million TB deaths among HIV-negative people (down from 1.7 million in 2000) and an additional 3.74 lakh death among HIV-positive people. An estimated 10.4 million people fell ill with TB in 2016: 90% were adults, 65% were male, 10% were people living with HIV (74% in Africa) and 56% were in five countries: India, Indonesia, China, the Philippines and Pakistan.[1] Tuberculomas are granulomatous mass lesions composed of a central zone of caseation surrounded by a collagenous tissue capsule arising in the brain parenchyma or the spinal cord.[3]A seizure is a paroxysmal event due to abnormal excessive or synchronous neuronal activity in the brain. Epilepsy is a condition in which the patient has recurrent seizure due to a chronic, underlying process. The incidence of epilepsy is 0.3- 0.5% in different populations throughout the world, and the prevalence of the epilepsy has been estimated at 5-10 persons per 1000.[2]

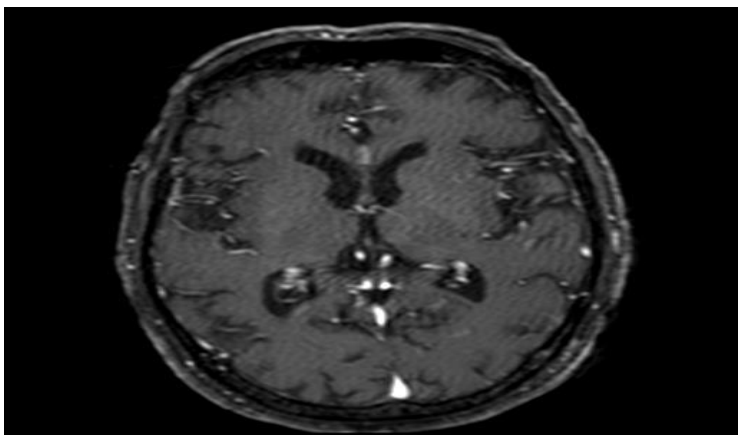
Case I

A male patient with age 74yrs was admitted on emergency with complaints of continuous GTCS of 20-25 episodes without regaining of consciousness. On admission patient was with drooping of saliva, seizure on Right side, urinary and bowel incontinence, loss of weakness on right upper and lower limb. Patient was intubated because of desaturation to protect airway has having right focal seizures with low grade fever and neck stiffness since 1 week and poor GCS (E_2 V_7 M_2). On examination his physical findings such as heart rate: 75/min, pulse rate: 62/min, Blood Pressure: 127/59mmHg and SpO2: 93% were found to be normal. Eye examination reveals spontaneous eye movements, presence of eye contact and obeying commands. To stabilize the patient, inj. Lorazepam 8mg, inj. Levetiracetam 500mg and inj. Thiamine 100mg was given.

The patient has past history of type II diabetes and Hypertension for almost 13years and Trabaculoma on left frontal region and the patient was on Anti Tubercular therapy for past 8months. Social history reveals that the patient was alcoholic with daily intake more than 2g/day.

Magnetic Resonance Imaging without contrast unfold focal gliosis and encephalomalacia changes in cortical anterio parietal region, recurrent focal seizures with left intracranial space occupying lesion and gliotic changes. While MRI with contrast disclose peripheral ring and decoid exchange T_L ganglio intense subpial nodular lesion in left frontal region and Leptomeningeal enhancement in basal cisterns. Size of the lesion in MRI is increased.

Laboratory investigation shows that hematologic parameters such as Hemoglobin 10.8g/dl, total count 14,520cell/mm^3, platelet count 2.5lakh and Erythrocyte Sedimentation Rate 96mm/hr. Renal function values such urea 170mg/dl and serum creatinine 1.44mg/dl were higher than normal. In addition Liver function test disclose the serum globulin level of 4gm/dl and remaining were in normal range. Cerebrospinal fluid examination shows the protein level of 39.6 and sugar level of 71mg/dl. And the presence of MDR TB is negative
The patient was treated with Isoniazid 300mg, Rifampicin 600mg, Ethambutol 1gm, Pyrazinamide 1.5gm, T. Pyridoxine 40mgonce daily, T. Phenytoin 100mg twice daily, T. Lacosamide 100mg twice daily, T. Levetiracetam 750mg twice daily, T. Dexamethasone 0.5mg twice daily, and T. Benfothiamine 100mg once daily.



DISCUSSION

Epilepsy is a neurological disorder in which brain activity becomes abnormal, causing seizures or periods of unusual behavior, sensations, and sometimes loss of awareness. The patient was having continuous seizures, with loss of consciousness in each episode with eyes open and unable to speak in an appropriate way. In addition to this, the patient having the history of trabaculoma on left frontal region and imaging studies shows focal gliosis and encephalomalacia changes in cortical anterior parietal region, recurrent focal seizures with left intracranial space occupying lesion confirm the diagnosis as complex partial seizures. This is favored by the study of Brooks S.B. et.al. in which pathological changes with associated temporal gliosis which occurs in 38% of patients with complex partial seizures. The reason behind the occurrence of partial seizure is due to the metastasis of mycobacterium tuberculosis and associated neuronal damage. The CNS trabaculoma that occurs due to tuberculosis sometimes present with space occupying lesions and gliotic changes produces partial seizures [4,5].

The total count is more than the normal level of 3000-11000 cell/mm^3, elevated erythrocyte sedimentation rate and increased size of lesion in MRI confirm the presence of extra pulmonary tuberculosis. The renal parameters such as urea and creatinine are elevated because of that the patient had continuous jerking movements and that is common in all the cases.

The patient was on antitubercular therapy consist of Isoniazid 300mg, Rifampicin 600mg, Ethambutol 1gm and Pyrazinamide 1.5gm, as once daily dose. T. Pyridoxine 40mg was given to the patient to reduce the risk of Isoniazid induced neurotoxicity. The liver function test was found to be normal, so no need for dose adjustment.

All drugs except ethosuximide can be used for the treatment of complex partial seizure. The drugs are selected based on its efficacy. Here, T. Phenytoin 100mg twice daily, T. Lacosamide 100mg twice daily, T. Levetiracetam 750mg twice daily was given for treating the patient. Even though the seizure was induced by the formation of trabeculoma, antiepileptic drugs were given to the patient to prevent seizure recurrence.

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