



Brain abscess due to corticosteroid: A Case Report

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ABSTRACT

Brain abscess is an infectious process that occurs due to accumulation of pus in brain tissue. It usually occurs because of an earlier problem; for instance, weakened immune system caused by corticosteroid consumption. The introduced patient is diagnosed with brain abscess caused by long-term consumption of Dexamethasone. The patient is a 21-year-old male who has started daily consumption of seven 5mg Dexamethasone tablets for four years to gain weight. The patient stopped consuming the drug suddenly about one week before referring to hospital. Two days later, he experienced drowsiness and muscle weakness. His history suggested two seizure-like movements two days before referring to the hospital. At admission, he had adrenal insufficiency symptoms, striae on abdomen, axilla, and groin. The neurological examination showed movement of organs as 4.5. CT scan and MRI revealed some evidence of brain abscess in right insular area. Finally, the patient's brain abscess was drained and he was discharged from the hospital after course of treatment and recovery. Different types of infections – such as brain abscess – should be taken into consideration for the immunocompromised patients or the individuals consuming immune system suppressors and necessary measures should be taken for treating and reducing its complications.

Keywords: Brain Abscess, Adrenal Cortex Hormones, Immunocompromised Host

INTRODUCTION

Brain abscess is an unusual suppurative disease inside skull (1). Brain abscess or brain parenchymal infection is often caused by trauma and surgery. Although the disease creates a series of localized neurological symptoms, it usually occurs with a series of non-specific symptoms such as headache, fever, weakness, and lethargy (2). Brain abscess has various causes - bacterial causes (3) such as *Haemophilus influenzae* (4), *Staphylococcus aureus* (5), Tuberculous (6) and etc, or fungi causes such as (7). Meningitis, brain abscess, encephalitis, etc are among brain infections, which may be one of the complications of immunodeficiency (8). Corticosteroid is one of the drugs that may lead to an immunodeficiency and consequently an increased risk of infections, which is related to dosage and consumption duration (9). Corticosteroid has been extensively used in medicine for 50 years. It plays a crucial role in treating different types of illnesses (10). Notably, corticosteroid is used for skin diseases, rheumatologic, blood, endocrine and metabolic, labor, etc (11). Patients reported some cases in which they were diagnosed with brain abscess with different microorganisms due to some diseases or consuming immune system suppressors such as Corticosteroid and Cyclosporine (12). The introduced patient is diagnosed with brain abscess caused by long-term consumption of Dexamethasone.

Introduction of Patient: The patient is a 31-year-old male who has started daily consumption of seven Dexamethasone tablets with 5mg dosage for four years aiming to gain weight. The patient stopped consuming the drug suddenly about one week before admission. Two days later, he experienced drowsiness and muscle weakness. His history suggested two seizure-like movements the day before admission; each movement lasted about 20 minutes. At admission, his blood pressure, temperature, RR, HR were 100/70, 37°C, 18, 119, respectively. In the

preliminary examinations, he had a moon face with mid-size pupils reactive to light, a pink striae in axilla, with buffalo hump specifications. Oral examinations showed a candidiasis chip. There were vesicular lesions on the patient's chest wall. No pulmonary and cardiac symptoms were found. The patient had a fatty abdomen with distention and purple striae. He had edema in the right hand area. The neurological examination showed movement of organs as 4.5. The patient was finally hospitalized and received medical care for five days in ICU. According to the brain CT scan (Image 1), brain abscess was introduced, the medical treatment started and MRI confirmed the brain abscess (Image 2,3). Finally, the patient's brain abscess was drained. The patient had fever during the course of treatment. He did not have fever after discharging the brain abscess and the patient's general condition was improved. After hospitalizing for one month, he received AB and discharged from the hospital AMA.

Image-1

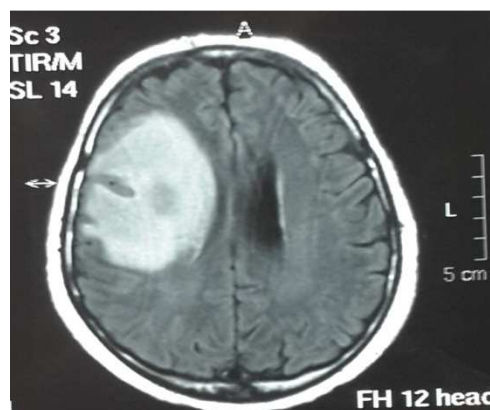


Image-2

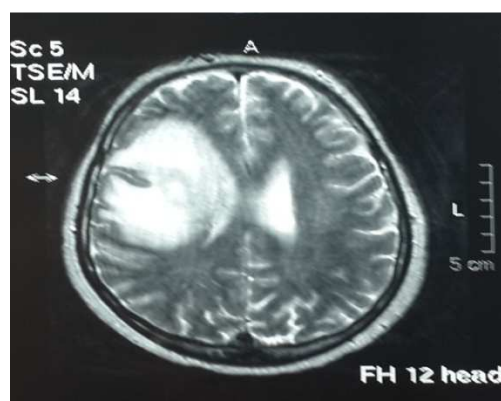


Image-3



DISCUSSION

Weakened immune system in the patients who have undergone organ transplant surgery could pave grounds for brain abscess as a life-threatening and fatal complication (13) (14). For instance, viral agents in the immunosuppressed patients may cause brain infections (15). Brain abscesses were seen for some reasons in some patients with weakened immunity level(16) . Meanwhile, several studies - for example, Limmahakhun *et al.* (17), Dee *et al.* (18) discuss brain abscess formation by *Listeria monocytogenes* in immunocompromised individuals, In a case report, Lee *et al.* concluded that *Gemella haemolysans* is a microorganism that may cause brain abscess in immunocompetent individuals (19) . In a case report, Al Khatti refers to brain abscess formation in a patient with Multiple myeloma. Eckburg *et al.* also discussed brain abscess formation in a case report due to Corticosteroid consumption (20). Paying attention to these studies is important, as a patient with long-term consumption of Corticosteroid was in our case report. Another important matter that may be referred to here is that the Corticosteroids can be used in treatment protocol for patients with brain abscess to reduce degree of inflammation and treatment progress (21). However, we see that chronic consumption of the Corticosteroids may cause brain abscess. Brain abscess in the immunocompromised individuals and those with neurological symptoms can be considered as differential diagnosis.

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