CEREBRAL ASPERGILLOSIS PRESENTING AS A SPACE OCCUPYING LESION OF THE BRAIN

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ABSTRACT

Aspergillosis is one of the important causes of life threatening fungal infections in immunocompromised patients. We report the case of a 47 year old asthmatic female patient taking steroid inhalers who presented with headache and change in personality. Her computerized tomographic (CT) scan of brain revealed a space occupying lesion (SOL) in frontal lobes. Excisional biopsy of the lesion revealed aspergillosis. She was treated with voriconazole to which she responded well.

Keywords: Aspergillosis, Space occupying lesion, Voriconazole.

INTRODUCTION

Aspergillus is a common fungus found in soil and decaying vegetation. Lungs and paranasal sinuses are the most common sites of primary infection. Infection reaches the brain from lungs and paranasal sinuses through hematogenous spread[1].

Invasive aspergillosis most commonly occurs in immunocompromised patients and is very rare in immunocompetent hosts. The primary risk factors are neutropenia and use of glucocorticoids. A definitive diagnosis requires demonstration of fungus in biopsy material or culture from a sterile site. Aspergillus antigen test has been used for early diagnosis of invasive disease.

Antifungal drugs effective against aspergillus include voriconazole, amphotericin B, itraconazole, posaconazole and caspofungin[2]. Early initiation of systemic antifungal therapy is essential in improving survival rates in these patients.

CASE REPORT

A 47 year old female was admitted to the Combined Military Hospital (CMH) Lahore on 10th of October 2015 for investigation of space occupying lesion (SOL) of brain. She had been having nonspecific headaches for one year. Few months ago her family noticed change in her personality. A CT scan of her brain revealed an SOL and she was referred to this hospital for further investigations.

She had bronchial asthma for 15 years and was taking inhaled steroids with intermittent courses of oral steroids for exacerbations of her

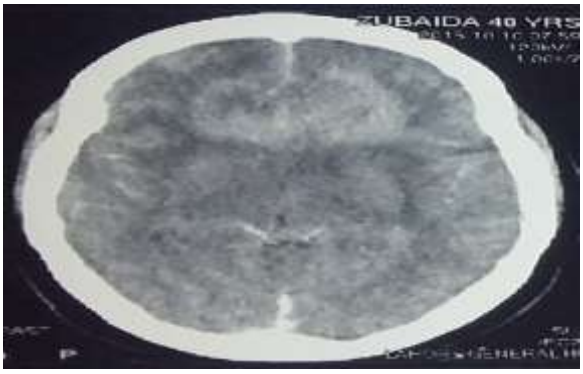

Figure-1: Contrast enhanced CT scan of brain showing bifrontal SOL.

symptoms. She had no history of pulmonary tuberculosis.

She had no focal neurologic deficit and her systemic examination was unremarkable. Her contrast enhanced CT scan (fig-1) and MRI of brain (fig-2) showed a mass involving bilateral frontal lobes and corpus callosum suggesting a high grade glioma. Her chest X-ray showed nodular shadowings in the right upper zone.

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Rest of her investigations including blood complete picture, liver function tests and renal function tests were normal. Her excisional biopsy of SOL was performed. Post operatively she developed aphasia and right hemiplegia. Biopsy report of SOL revealed chronic granulomatous inflammation with branching septate hyphae favoring aspergillosis.

She was administered voriconazole 400mg intravenously (iv) 12 hourly on first day followed by 200 mg 12 hourly for next few days, then switched over to oral voriconazole 200mg 12 hourly. Her neurologic symptoms improved within one month except for residual aphasia and right hemiplegia. She was discharged on oral voriconazole 200 mg twice daily with advice to have regular follow up in outdoor.

DISCUSSION

Cerebral aspergillosis is a difficult to diagnose infection. It may present as a single or multiple abscesses. Cerebral granuloma can mimic a primary or secondary tumor. Blood vessel invasion by fungal hyphae may lead to thrombosis, necrosis and hemorrhage. However, it does not present as meningitis[3].

Early diagnosis of cerebral aspergillosis requires a high degree of clinical suspicion. Changes in mental status, hemiparesis and seizures are common but other nonspecific neurological features may also occur. CT scan of brain is usually nonspecific and may show an intracranial mass lesion. MRI is the most useful noninvasive investigation. A definite diagnosis requires histopathological examination of brain tissue.

The standard antifungal drug for treatment of cerebral aspergillosis is voriconazole. It has been shown to be more effective than conventional amphotericin B[4]. Its' recommended dose is 6 mg/kg iv twice a day on day one followed by 4 mg/kg iv twice daily. When the patient has been stabilized it can be switched to 200 mg orally twice daily. Amphotericin B can be a suitable alternative in patients who are intolerant or refractory to primary antifungal therapy. The current debate is whether voriconazole should be used as monotherapy or another antifungal agent should be added to it in invasive aspergillosis[5].

The duration of treatment varies from 3 months to several years depending on patient's immune status and response to therapy. Generally antifungal therapy is continued until all signs and symptoms as well as radiographic evidence of the infection have resolved for at least two weeks.

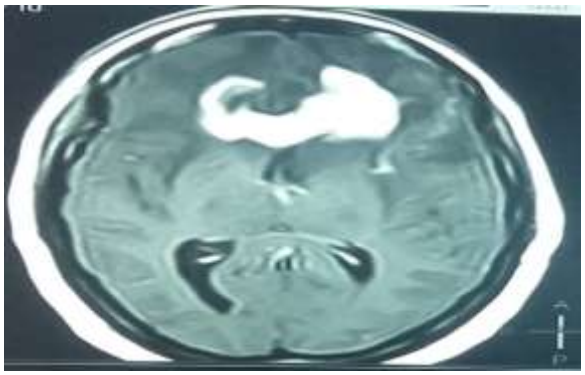

Figure-2: Contrast enhanced MRI of brain showing the same lesion.

This case report emphasizes the importance of early diagnosis of cerebral aspergillosis as early administration of voriconazole decreases morbidity and mortality in these patients.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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