



Case report

Midbrain infarction: a rare presentation of cryptococcal meningitis

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Abstract

A 20-year-old farmer who had headache and fever for 1 month, suddenly developed left hemiplegia, tremor in left arm and titubation followed by deep coma. Cranial CT scan revealed an infarction in right crus of midbrain. His CSF revealed 66 mg/dl protein, 10 lymphocytes/mm³, and 70 mg/dl glucose. CSF was positive for cryptococcal antigen. He improved following i.v. amphotericin 0.5 mg/kg and fluconazole 200 mg daily, continued for 6 and 12 weeks respectively. Infarctions though rare in cryptococcal meningitis should be considered in patients with chronic meningitis with vasculitis. © 1999 Elsevier Science B.V. All rights reserved.

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1. Introduction

Fungal nervous system disease manifests with chronic meningitis, abscess or granuloma formation or infarction [1]. Cryptococcosis with maximum affinity for the central nervous system has rarely been reported to result in infarction compared with other fungal diseases [1–3]. In an autopsy study, vasculitis was reported in two out of seven AIDS patients who died of cryptococcal meningitis [4]. In the pre-AIDS era, infarctions were rarely reported in cryptococcal meningitis. We discovered only one report of acute onset of hemiplegia in a patient with cryptococcal meningitis [5]. We recently managed a patient with cryptococcal meningitis who presented with midbrain infarction. In chronic meningitis patients with infarction, the possibility of cryptococcosis should be considered.

2. Case report

A 20-year-old farmer presented with history of low grade continuous fever and headache for 1 month. He developed sudden onset of left hemiplegia associated with titubation and tremors in the left arm 10 days before admission. The tremors increased on voluntary activity and subsided during rest or sleep. Within 5 days, his consciousness deteriorated to deep coma. There was no past history of diabetes, hypertension or cardiac disease. The patient was emaciated. The pulse rate was 120/min, blood pressure 130/90 mmHg and temperature 39°C. The pupils (3 mm symmetrical) responded normally to light. Ocular fundi were normal. He had flaccid quadriparesis. Biceps, triceps, knee and ankle reflexes were exaggerated with bilateral extensor planter response. He had coarse resting tremors which increased when an upper limb was placed in flexed and semiprone position. The tremors manifested with flexion and extension of elbow and wrist. On sitting up there were head tremors as well.

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Haemoglobin was 9.3 gm%, blood counts normal, ESR 31 mm for 1st hour, blood sugar 104 mg/dl, blood urea 30 mg/dl, serum creatinine 1.1 mg/dl, serum sodium 136 M Eq/l, and serum potassium 4.2 M Eq/l. Urinalysis revealed 0.6 g protein/24 h, chest radiograph was normal and skin test using PPD was 14 mm. EEG revealed generalised slowing of theta to delta range which did not significantly alter on passive eye opening or skin stimulation. There was no epileptiform activity. Cranial CT scan revealed infarction in right midbrain crus (Fig. 1). Cerebrospinal fluid analysis revealed normal pressure, 66 mg/dl of protein, 70 mg/dl of glucose, 10 lymphocytes/mm³, and negative India ink preparation for cryptococci. Cryptococcal antigen was positive. Serum test for syphilis and HIV were negative. The patient was prescribed i.v. amphotericin B 0.5 mg/kg and fluconazole 200 mg daily. He started improving after 2 weeks of treatment. Tremors subsided by the 3rd week. Amphotericin B was given for 6 weeks and fluconazole continued for 3 months. The patient was discharged after 8 weeks when he could communicate and sit independently. At 3 months follow-up the patient was independent in daily activity. There was no titubation or tremor, however, deep tendon reflexes were exaggerated bilaterally. So far there has been no recurrence of symptoms.



Fig. 1. Contrast CT scan, axial section showing right-sided midbrain infarction.

3. Discussion

The acute clinical picture in our patient was consistent with midbrain involvement. On CT scan there was an infarction in the right midbrain crus. Before developing the stroke the patient complained of headache and fever attributed to cryptococcal meningitis.

Midbrain tremors are referred to as rubral tremors because of presumed involvement of red nucleus [6]. In our patient the infarction was located close to red nucleus. The involvement of red nucleus, however, is not essential for the development of tremors in midbrain lesions [7]. Kinetic tremors are attributed to the involvement of superior cerebellar peduncle. Palatal myoclonus has been reported in association with midbrain tremors [8]. The similar rate of palatal myoclonus and midbrain tremor has been taken as evidence of common origin. The palatal movements are quite rhythmic and should be referred to as tremor rather than myoclonus [9]. The upper limb tremor and titubation appeared and waned simultaneously which suggests a common origin. In a study of 22 patients with midbrain infarction, middle midbrain infarctions were the commonest and these patients had a localising clinical picture [10]. However, in none of these patients was vasculitis held to have produced the midbrain infarction. In our patient the diagnosis of cryptococcal meningitis was based on the demonstration of cryptococcal antigen and therapeutic response to antifungal agents.

Fungal infections of the CNS involve the brain base more frequently compared with the spinal cord [11]. Some isolates of *Cryptococcus neoformans* have a propensity to induce either vasculitis or cerebral infarction. In the pre-AIDS era, patients with cryptococcal meningitis were reported to occasionally develop stroke [5]. A typical mesencephalic cryptococcal lesion resulting in soap bubble appearance has been reported in an autopsy study [12]. Cutaneous cryptococcal infection giving rise to vasculitis has also been reported [13]. In a patient with cryptococcal meningitis evidence of arteritis on angiography has also been reported [14]. Among patients with AIDS and cryptococcal meningitis, two out of seven patients had associated cerebral infarction at autopsy [4]. Histopathologically there was dense perivascular infiltrate in both AIDS and non-AIDS patients with cryptococcal meningitis.

In view of this report, in a patient with ischaemic stroke, especially with chronic meningitis, cryptococcosis should also be considered a possibility.

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