Intracranial tuberculous abscess mimicking malignant glioma

Faruk Ildan1, Fatih Gürsoy2, Bülent Gül3, Bülent Boyar2, and Celal Kılıç4

1Department of Neurosurgery, Cukurova University School of Medicine, Balcalı, Adana, Turkey, 2Department of Neurosurgery, Ankara Numune State Hospital, Turkey, 3Department of Neurosurgery, Ankara Numune State Hospital, and 4Ankara Numune State Hospital, Turkey

Abstract

Brain abscess is probably the least common manifestation of tuberculous infection of the central nervous system; meningitis and tuberculoma are much more common.

A case of tuberculous brain abscess in a 23-year-old man with previous history of Tbc meningitis is presented. The computerized tomographic scan demonstrated a unilocular space-occupying lesion in the left thalamic region, surrounded by a thick hyperdense enhancing rim. It is suggested that a relatively long clinical history and previous Tbc meningitis history together with the appearance of a thick-walled abscess-like lesion on the CT scan may indicate the diagnosis of a tuberculous brain abscess. Only after neurosurgical removal of the abscess, the pathohistological examination reveal tuberculous etiology of the abscess. The patient later died from aspiration bronchopneumonia. Only 28 instances of tuberculous abscess have been reported in the literature.

Keywords: Brain abscess, glioma, tuberculoma, tuberculous abscess.

1 Introduction

Tuberculous involvement of the central nervous system usually appears as tuberculous meningitis or a discrete tuberculoma.

Tuberculous brain abscess, an encapsulated collection of pus containing viable tubercle bacili, is quite rare. Only 28 cases have been documented in the literature with only 12 survivals [2, 7, 9, 11, 14, 17, 19, 21, 22, 23].

In 1978, Whitener presented a case of tuberculous cerebral abscess and made an exhaustive search of the world literature, finding 57 cases designated as tuberculous abscess but only 17 cases which fulfilled his rigid criteria based on the microscopic, histological, and bacteriological aspects [21].

Since 1978, 11 cases with tuberculous brain abscess have been reported in the literature [4, 7, 8, 9, 11, 16, 17, 20, 22, 23].

We report an additional case that fulfills the diagnostic criteria for tuberculosis brain abscess as laid down by Evans and Smith, and Whitener [6, 21].

2 Case report

This 23-year-old man was admitted to our hospital on November 11, 1988, for the investigation of right hemiparesis and blurring of vision.

Two years previous to his admission he had suffered from increasing headaches associated with vomiting. He was admitted to infectious disease service as a case of tuberculous meningitis and was treated with rifampicin 10 mg/kg/d, isoniazid 15 mg/kg/d, and streptomycin 1 g/d i.m. He was discharged on antituberculous therapy, which he maintained for only three months. One year later, he began suffering from weakness of the right arm and leg which slowly increased in severity. At that time this patient was admitted to another neurosurgical department. Computed tomo-
graphic scans demonstrated a space-occupying lesion of the left thalamic region with an isodense center and an enhancing rim surrounded by a rim of edema which was interpreted as a malignant glial tumor (Figure 1). The lateral ventricles were slightly dilated. At that department, CT guided a biopsy was made of this lesion. The histological diagnosis showed normal brain tissue. This lesion in the left thalamic region was thought to represent a malignant glial tumor. The patient was transferred to the radiotherapy department and given radiation therapy at a dose of 5000 rads in six weeks. The patient's clinical course did not change after radiation therapy. The patient was admitted to our neurosurgical department with this history.

2.1 Examination

General physical examination on admission revealed no abnormal findings. Neurologically he was alert and normally oriented, a right spastic hemiparesis and a right central facial palsy were noted.

Fundoscopic examination showed bilateral papilledema. No other neurological abnormality was apparent.

Routine hematological and biochemical tests were within normal limits. The plain x-ray of the skull and the chest were found to be normal. Computed tomography of the brain revealed an isodense lesion in the left thalamic region. After intravenous contrast medium administration a ring-like enhancement was seen encircling the isodense lesion which caused hydrocephalus (Figure 2).

In November, 1988, a left frontotemporal craniotomy was performed. After cortical incision, we entered into the left lateral ventricle, where an encapsulated and lobulated mass was found. Pus was aspirated into a syringe and measured 10 ml. The entire lesion was then excised.

The pus was sent for bacteriological and pathological examination. Intraoperative stains of the pus demonstrated acid-fast bacilli, and culture subsequently grew mycobacterium tuberculosis in Lowenstein-Jensen medium. Pathological examination of the excised abscess showed a thick wall of fibrous tissue measuring 4 to 5 mm (Figure 3).

2.2 Postoperative course

Antituberculous therapy was commended immediately after the operation. At the fifth postoperative day the patient died from aspiration bronchopneumonia.

3 Discussion

CNS tuberculosis presents most frequently as basilar meningitis, followed by tuberculomas [1, 3,