

Falldarstellungen

Cerebral candidiasis presenting as a mass lesion

M. Hanci, A. Kafadar¹, A. Sarioğlu¹, C. Işlak², B. Öz³

¹ Department of Neurosurgery; ² Department of Radiology; ³ Department of Pathology, Cerrahpaşa Medical Faculty University of Istanbul, Turkey

Key words: Candida Albicans

Summary: The authors report of a case of pseudotumour caused by Candida species without evidence of any underlying disease. No portal of entry of the infection was found. Total removal followed by treatment with flucanazole re-

sulted in a favorable outcome. We discuss the differential diagnosis of a huge calcified intracranial mass lesion without any soft tissue component.

submitted: 27.08.96
accepted: 22.01.98

Raumforderung durch zerebrale Candidiasis

Schlüsselwörter: Candida Albicans

Zusammenfassung: Die Autoren berichten über einen Pseudotumorfall, der durch Candida-Befall verursacht worden ist und keine Zeichen für eine systemische Erkrankung

bot. Kein Eintrittspunkt für diese Entzündung ist gefunden worden. Nach totaler Exstirpation und anschließender Therapie mit Flucanazole kam es zur Ausheilung. Wir diskutieren die Differentialdiagnose einer großen verkalkten intrakraniellen Raumforderung, die keine Weichteilkomponente aufwies.

Introduction

The existence of a solitary Candida mass lesion of the brain in the absence of any systemic involvement and nonimmunocompromised host is very rare [2]. We report on a case of frontal mass lesion due to Candida infection, diagnosed in a healthy patient.

Case report

A 28-year old man was admitted with an 18-year history of focal seizures involving the left arm and leg. One month before the admission he had trivial head injury during a seizure. The neurological examination was completely normal. He was otherwise healthy except for a history of bronchial cyst hydatid operation at the age of six, the postoperative course was complicated with fever and pleural infection with pneu-

monia necessitating surgical drainage and appropriate chemotherapy. No information concerning any germ cultured either from local pus or blood exists. During the post operative period he had a generalized seizure for which no explanation was found. At the time of present admission, routine laboratory tests as well as urine, sputum and blood cultures and serologic examinations were normal. No clinical or laboratory evidence of immunological deficiency was noted. A serum immunoelectrophoresis and Anti HIV 1+2 were normal. The only abnormal laboratory investigation was a positive result of cyst hydatid IgG. Plain films showed a densely calcified, smoothly contoured right supratentorial mass lesion, which on CT appeared to be just calcification in the right anterior centrum semiovale, without any soft tissue component (Fig. 1). MR examination revealed a rather dissipated matrix that appeared hypo-isointense on T1W

(Fig. 2) and hypointense on T2W series (Fig. 3). After IV Gd DTPA injection no enhancement was noted, the overlying cerebral mantle was intact. Radiological findings therefore suggested a calcified process of either granulomatous or tumorous nature. At surgery, a well-encapsulated, cystic mass was encountered and gross total removal was achieved. Histopathological examination revealed small tissue fragments hyalined fibrous capsule between the gliotic brain tissue. The inner surface was covered by necrotic brain tissue with inflammatory cells which were composed of neutrophils, lymphocytes, macrophages and scattered giant cells in the cerebritis area. On H+E stain septate pseudohyphae and yeast were seen. The pseudohyphae and yeasts were stained positive with PAS and methenamine silver methods and indicated separate segmental swelling (Fig. 4). The patient was treated with 200 mg fluconazole bid for three weeks and made an uneventful clinical recovery, with no neurological deficits.

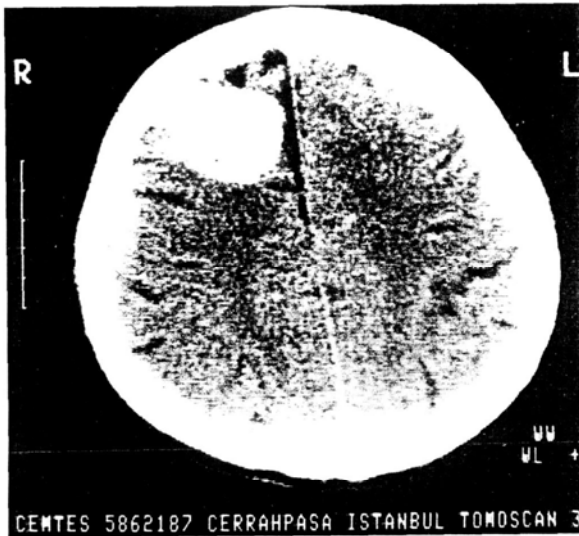


Fig. 1 Nonenhanced CT confirms the right frontal hyperdense lesion without any discernible mass effect

Discussion

Although many intracranial processes either physiologic or pathologic might present themselves as calcified lesions, differential diagnosis in many of them is quite straightforward since their location, symmetry, laboratory findings, accompanying soft tissue mass and concomitant skin lesions are usually helpful. Nevertheless some discussion concerning the differential diagnosis of a huge calcified intracranial mass lesion without any soft tissue component should be made. This type of subcortical calcification resembles

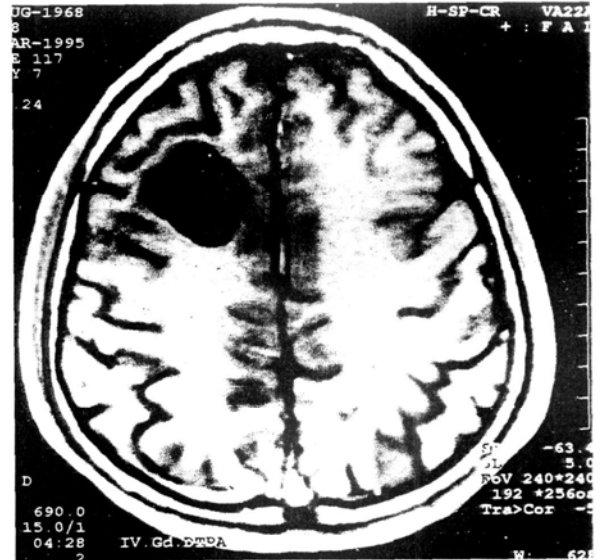


Fig. 2 In the contrast-enhanced T1W axial image the lesion is hypointense with smooth contours. Sulci in its vicinity are rather large and there appears to be no enhancement

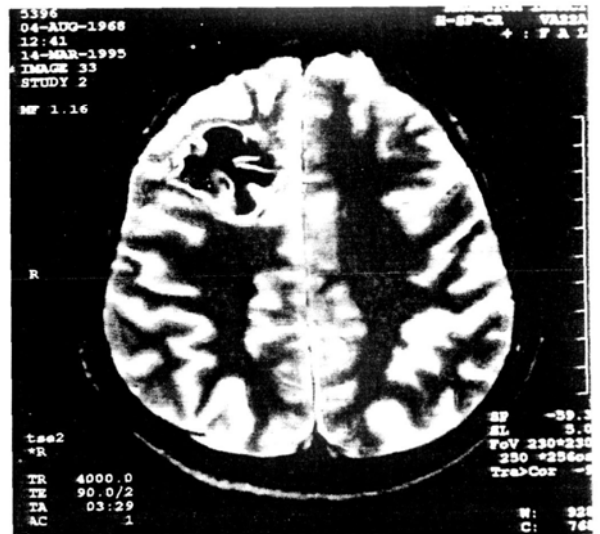


Fig. 3 In the T2W series, the lesion exhibits almost no signal, but there is a very thin peripheral hyperintense rim reflecting either reactionary brain tissue or fringe of the lesion which is rather rich in proton

primary or metastatic tumors. Especially the calcifications in oligodendrogliomas, which are typically located in the frontal lobe, can often be nodular and massive within the tumor. On CECT, there is heterogeneous enhancement, which may be a thick and ir-

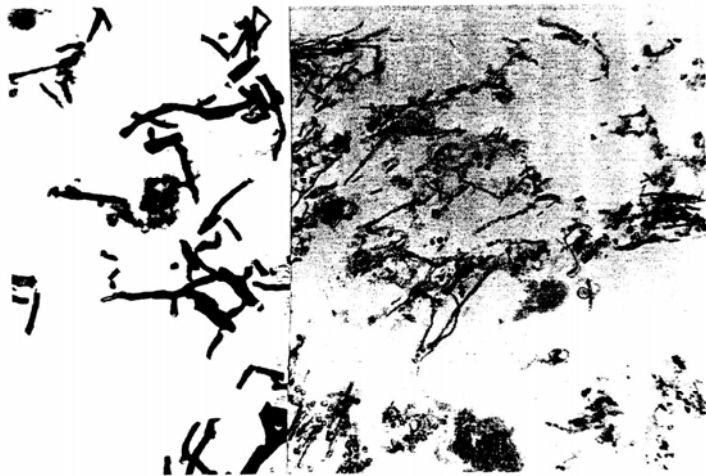


Fig. 4 Inflammatory cells with *Candida* pseudohyphae and yeasts left (H+E X80) Right (methamine silver stain X200)

regular ring. On MR the oligodendroglioma presents as a mass that is usually heterogeneous in all sequences. In some cases, there may be one or several chunks of calcification that are hypointense on all spin-echo sequences.

In our case, MR examination revealed a rather dissipated homogeneous matrix, with no enhancement after IV Gd DTPA injection. Because of this, a tumorous process can also be excluded, since a purely calcified oligodendroglioma without any surrounding edema and soft tissue component is very unlikely (3,4). Considering parasitic infections, calcifications in cysticercosis are a manifestation of dead larvae and are seen only in the parenchymal form. Usually they are located in the gray matter or the gray-white matter junction [5]. In our case there was no cyst or any type of calcification pattern resembling cysticercosis. We see no relationship between the calcified lesion and the patient's history of bronchial cyst hydatid operation. Granulomatous infections, especially a tuberculoma may calcify. Mature tuberculomas appear as well delineated, round or oval ring enhancing masses [1]. Tuberculomas are typically isointense with brain on T1WI, have a central hyperintense region with hypointense rim on T2WI and show marked enhancement following contrast injection [3, 4, 6]. In our case the hypointense appearance on T2WI and a dense calcification in NECT may resemble a tuberculoma, but there was neither a history nor findings suggesting tuberculosis. It was an unexpected histopathological finding that this calcified lesion was a cerebral can-

didiasis presenting as a mass. We want to state that it is necessary to include fungal infections, as in this case of candidiasis in the differential diagnosis of cerebral calcification. From this case, one should draw the conclusion that *Candida* infection should be borne in mind in the differential diagnosis of densely calcified intracranial masses.

Acknowledgments: The assistance of Linda Mikilauskas in the preparation of this paper is gratefully acknowledged

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Murat Hanci M. D.
PO Box: 792 8220
Şişli
Istanbul, Turkey
Fax: +90/212/6320026