

Cerebral Cryptococcoma ; Abscess Form in Non-aids Patient A case report and review literatures

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Abstract : Cryptococcoma, abscess form in the brain has been infrequently found. I describe a man with dementia and seizure, multinodular cystic mass lesion in CAT Brain scan proven to be cryptococcoma by culture and histopathological finding.
Key words brain, cryptococcoma, meningitis, abscess

Cryptococcoma, abscess form in the brain is a rare clinical manifestation. The synonyms are toruloma, cryptococcal granulomata or cryptococccic granuloma. I report a patient with dementia and seizure, in CAT brain scan there is a huge multinodular cystic mass lesion in cerebral cortex, mimic brain tumor or tuberculoma, proven to be cryptococcoma, a first case in Nakhon Ratchasima province.

Case report

A 63-year-old man had a history of intermittent headache for 2 years and didn't improve by analgesic drugs. 2-3 months before he developed dementia, changing of sleep pattern. Subsequently seizure was developed about 2 times per week. 1 week before admission he had a labile mood and inappropriate crying. During this period he developed vomiting and changing of consciousness.

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Physical examination revealed a confused man with mild right hemiparesis and anisocoria of pupil, stiffness of neck was positive. Eye ground cannot be seen because of mature cataract. CAT brain scan showed a multinodular cystic mass lesion with surrounding edema and ring enhancement at left frontal and parietal lobe size 5x6x5 cms. [picture 1] The blood chemistry showed normal include blood sugar, BUN, CR, LFT, CBC and electrolyte. AntiHIV was negative. Serum cryptococcal antigen was positive in titer 1:10. Chest x-ray showed no abnormality. Craniotomy and tissue biopsy was done, the operative finding was multinodular abscess at left anterior clinoid process adhesion with left A2. Lumbar puncture was done. The CSF examination showed 6750 cells, neutrophil of 75%, lymphocyte of 25%, protein of 301 mg%, CSF sugar/blood sugar ratio of 8.9/153, india ink was negative for cryptococcus, cryptococcus antigen and fungal culture was positive.

The histopathological finding, in gross feature the specimen was a well encapsulated thick-walled cystic mass, 5x4x2.5 centrimaters. The cyst contained friable necrotic tissue. In microscopic feature, the fibrotic wall revealed chronic granulomatous inflammation with variable amount of multinucleated giant cells, foamy macrophages, lymphocytes and plasma cells infiltration. Numerous spherical or elliptical yeast like fungus that range from 5-20 micrometers in diameter were demonstrated both intracellular and extracellular. The organisms had mucinous capsule that contained acriminophilic material when stained by mucicarmine. Budding cells were numerous. The organisms were also demonstrated better with the special stain for fungus. [picture 2-5]

Amphotericin B was precribed, Five days after treatment patient developed alter of consciousness, CAT brain scan was repeated done, communicating hydrocephalus was found. Ventriculostomy was done. Later aspiration pneumonia, respiratory failure and shock was developed. Finally the patient expired.



Fig.1 The CAT brain scan with contrast enhancement showed brain abscess at left fronto-parietal lobe.

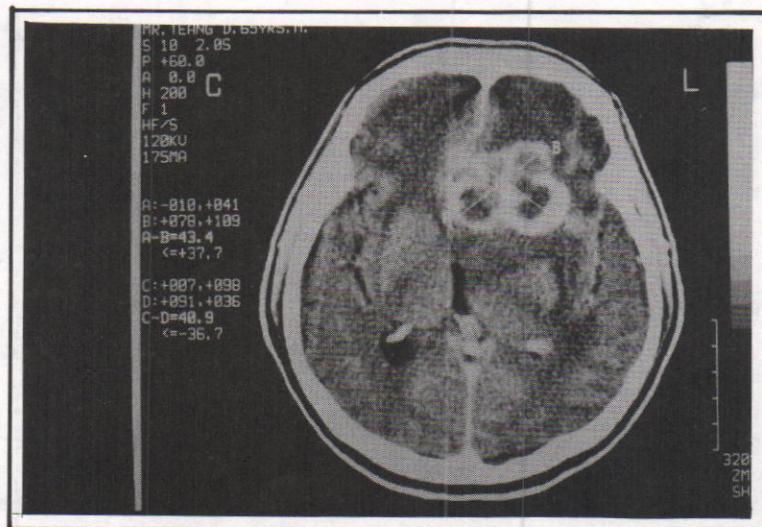




Fig.2 Cryptococci granulomatous inflammation with ventral necrosis H&E stain x40

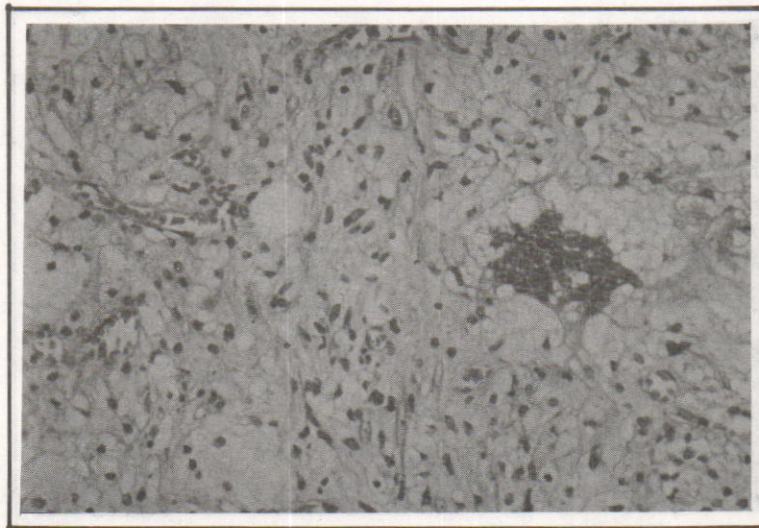


Fig.3 Numerous Cryptococci, predominantly in giant cell and macrophages H&E stain x40

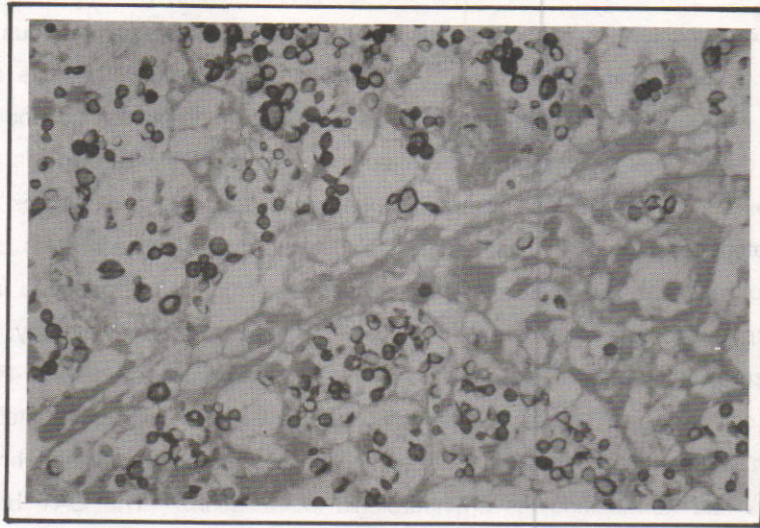


Fig.4 Section from the same lesion stained by GMS (Gomori's methenamine silver method) Budding cells are demonstrated.

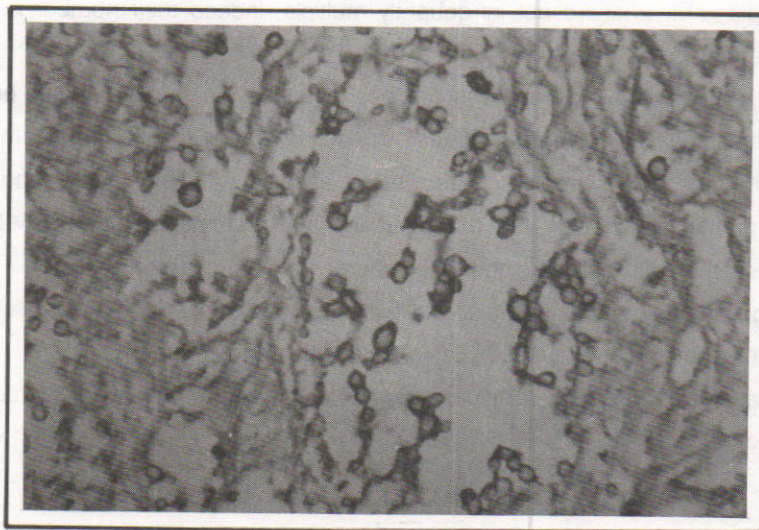


Fig.5 Section from the same lesion stained by Mayer's mucicarmine. The capsule is deeply carminophilic which distinguishes these from Histoplasma.

Discussion

Cerebral cryptococcoma was reported for the first time by LeCount and Myers in 1907.¹ The exact incident is unknown, but it is a rare form of central nervous system infection due to *Cryptococcal neoformans*.² It occurs predominantly in patients aged 30-50 years of male sex [80%] who apparently are immunologic competent.^{2,3} Condition predisposing to the development of cryptococcal meningitis^{2,3} are DM, sarcoidosis, pregnancy, alcoholism, pul. TB. The mass lesions are frequently associated with meningitis in 63% and pulmonary cryptococcosis in 31%.² In 18% of intracerebral mass lesion has no characteristic symptom or sign of focal CNS lesion.³ The commonest symptom is headache in 73%, less frequently symptoms are mental change [confusion, emotional lability, lethargy, and coma], weakness, seizure, nausea, vomiting, visual disturbances and unsteady gait. In 4% no symptoms of CNS diseases are noted.^{2,3} The most frequent abnormalities detected on physical examination included hemiparesis, papilledema, cranial nerve abnormalities, abnormal mental status. 11% had normal findings on neurologic examination.² The CAT brain scan in cryptococcal intracerebral mass lesion revealed hypo or isodense with ring or nodular enhancement or focal homogenous contrast-enhanced area^{2,3,4} and might be hypodense without enhancement.⁴ The cryptococcoma may decrease degree of contrast enhancement, if the patient took steroid.⁵ It may be found in intraventricle.⁶ The mass lesion occur mainly in the hemisphere and meninges such as cerebral cortex, basal ganglion, and thalamus, only in 10% of case in the cerebellum.^{3,4} They are vary in size from a few mm. to more than 6 cm. in diameter and are not infrequently multiple, indeed their number may increase during drug therapy.^{2,3}

In pathology, it may occur as gelatinous pseudocysts in 24% [soap bubble cyst], fibrogranulomatous mass in 15% and abscess in 9%, others in mix forms.^{2,4} In this case, the clinical symptoms and signs, the mass lesion associated in meningitis, the CAT brain scan and the pathologic findings are the same as in literatures but the CSF findings are different because the total cells are more than and neutropil are predominant.^{8,9} The mortality rate is high often greater than 50% and the recommended treatment has included both the use of antimicrobials (Amphotericin B + Flucytosine) and surgery.⁹

This case illustrated the rare cryptococcoma manifestation, abscess form of cryptococcal infection.

Referance

1. Sellby R.C.,M.D., and Lopes N.M.,M.D. : Torulomas (cryptococcal granulomata) of the central nervous system . J.Neurosurg (38) 1973 40-46
2. Fujita, N.K.,M. Reynard, F.L.Sapico, L.B.Guze and J.E. Edwards jr : cryptococcal intracerebral mass lesion : the role of computed tomography and nonsurgical management. Ann Internal Med. (94) 1981 382-388
3. Weenink, H.R. and G.W. Bruyn : Cryptococcosis, Handbook of clinical Neurology vol 52, Microbial disease 1988 431-433

4. Garcia, C.A.,L.A. Weisberg and W.S.J. Lacorte: Cryptococcal intracerebral mass lesion CT-pathologic consideration. Neurology (35) 1985 731-734
 5. Tress, B. and Davis S. : Computed tomography of intracerebral toruloma. Neuroradiology (17) 1979 223-226
 6. Popovich M.J., Arthur R.H., Helmer Edward : CT of intracranial cryptococcosis. AJNR (11) JAN-FEB 1990 139-142
 7. Liu, C.T. : Intracerebral cryptococcus granuloma. A case report. J.Neurosurg.(10) 1953 686-689
 8. Stockstill M.T.,M.D., Kauffman, C.A., M.D. : Comparison of Cryptococcal and Tuberculous Meningitis. Arch Neurol (40) Feb 1983 81-85
 9. Paul Bayardelle et.al : Success with amphotericin B and F-fluorocytosine in treating cerebral cryptococcoma accompanying cryptococcal meningitis. CMA Journal (127) Oct 15 1982 732-733
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