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Tubercular Brain Abscess a Rare Presentation of CNS Tuberculosis in an Immunocompetent Patient: A Case Report

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ABSTRACT

A rare case of tubercular brain abscess is reported. Our patient is a immunocompetent adult who was diagnosed to be tubercular brain following the histopathological demonstration of acid fast bacilli in the pus. Our patient improved following treatment with neurosurgical drainage and antitubercular therapy and was discharged successfully without any neurological deficit.

Keywords: Tubercular, brain abscess, acid fast bacilli, central nervous system, immunocompetent.

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INTRODUCTION

Tuberculosis of Central Nervous System (CNS) is responsible for heavy disease burden in India. Central nervous system tuberculosis still form a difficult clinical problem for diagnosis and treatment. CNS Tuberculosis present most commonly as tubercular meningitis, tuberculoma, cerebral miliary tuberculosis, tubercular encephalitis, cerebral brain abscess etc[1] . Tubercular brain abscess is a rare entity out of central nervous system Tuberculosis[2]. A tubercular abscess is characterized by an encapsulated collection of pus containing viable tubercular bacilli without evidence of the classic Tuberculoma. We here report a case 21 year old male who presented to us with recurrent seizures , right sided hemiparesis and altered sensorium .The diagnosis of cerebral abscess was made based on the presence of AFB in the pus drained from cerebral abscess. Patient was treated and was successfully discharged without any focal deficit.

Case report

We present a 21 years old male who was brought to emergency department of our hospital with complaints of recurrent episodes of seizures; right sided hemi paresis and altered sensorium since past 4-5 days. This adult male patient had history of chronic cough and loss of appetite for past 2 month along with weight loss of 6 kg over this period. There was no past history of any ear discharge, convulsions, vision loss, chronic headache etc. There was no contact history of tuberculosis given by patient.

On examination the patient was average built, pulse rate was 60/ minute, regular, Blood Pressure was 110/70 mm Hg and the respiratory rate was 26/minute. On neurological examination patient was stuperous, localizing to deep painful stimulus, and pupils were bilateral 2.5 mm reacting to light. There was no evidence of cranial nerve palsy. Right sided hemi paresis was present. Planters were extensor on right side and flexor on left. On examination of respiratory system crepitations were present on right infra clavicular, axillary and inter scapular region. Fundus examination was within normal limits. Cardiovascular and abdominal examination was unremarkable. Routine blood and biochemical investigations were normal except for elevated ESR. Contrast CT scan head was done which was suggestive of multiple ring enhancing lesions with significant perilesional edema and mid line shift in left temporo parital region suggestive of tubercular abscess. Chest X-Ray was showing right middle, lower s zone infiltration. Sputum was positive for Acid Fast Bacilli. Serum was negative for HIV. Patient was started on I/V Epsolin, I/V Mannitol, Anti tubercular drugs five drugs (Rifampicin, isoniazid, ethembutol, pyrizinamide, streptomycin), and supportive treatment, after 7th day of starting ATT seizures were subsided, but patients neurological status did not improved. Repeat CT Head was done which does not show any significant reduction in mass effect. Left temporo-parital craniotomy was done and pus was drained.

The gram stained smear of pus cells showed no organism but the ziehl neelsen staining positive for acid fast bacilli. The histopathological examination showed inflammatory cells with no caseation. Pus culture was negative on blood agar. But positive for mycobacterium

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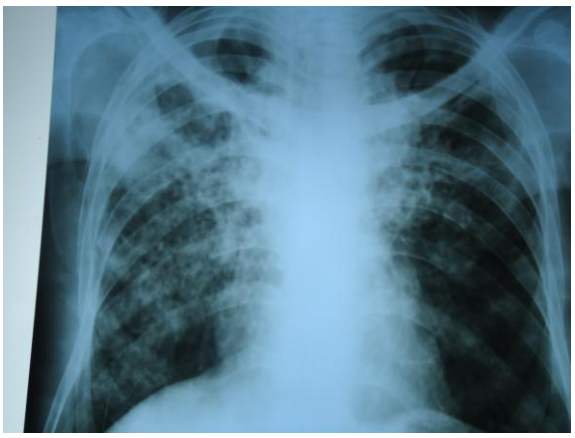
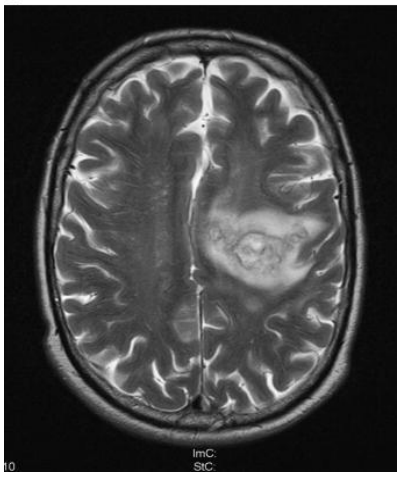
tuberculosis on Lowenstein Jensen media. After surgery patient condition improved, and discharge without any residual weakness after 2 months on anti tubercular drugs .



X ray chest showing tubercular infilteration in right middle and lower zone.



CT scan showing left sided temporoparietal tubercular brain abscess with mass effect .

DISCUSSION

Tuberculosis of brain is fairly common in underdeveloped world which manifest in form of tubercular meningitis, tuberculoma, miliary tuberculosis of brain etc. It is associated with huge morbidity and mortality burden. Early and accurate diagnosis is associated with improved outcome[3,4] . Among various presentation tubercular brain abscess is rare presentation of CNS tuberculosis. Therefore it is essential to correctly identify and promptly treat the same. We report a case of immunocompetent adult male who presented to us with seizure and hemiparesis and he was diagnosed to be a case of tubercular brain abscess with pulmonary tuberculosis. He was started on anti tubercular therapy but his neurological status did not show any improvement and hence he was considered for drainage of abscess. Following drainage his neurological status showed rapid recovery and his ATT was continued. Most of the tuberculous abscesses are hematogenous in origin, and spread of infection to the brain could occur due to

active tuberculous infection elsewhere in the body[5]. Our patients also probably had haematogenous spread from pulmonary region. Although our patient was a immunocompetent adult, most often the tubercular abscess occur in immunocompromised and debilitated patients. It is rare in immunocompetent patients[2]. A tuberculous abscess is characterized by an encapsulated collection of pus containing viable tubercular bacilli without evidence of the classic tubercular granuloma[5].A tubercular brain abscess according to criteria defind by whitener[6] has got the following characteristic.

1 True abscess formation within the brain substance characterized by cavity formation and central pus.
2. Vascular granulation tissue containing acute and chronic inflammatory cells, particularly polymorphs histologically.
3. Proof of tuberculous origin by either a positive pus culture for *Mycobacterium tuberculosis* or by demonstration of acid fast bacilli in the pus or abscess wall.

The brain tuberculosis which manifest as tuberculoma will show a typical granulomatous reaction, comprising of epithelioid cells and giant cells around a central area of necrosis whereas a tubercular abscess shows only chronic, nonspecific inflammatory changes. A giant cell reaction and epithelioid cells are not seen in tubercular abscess. Antitubercular therapy is the mainstay of treatment. Surgical evacuation is advocated depending on the size of the abscess and the neurological condition of the patient. Since our patient did not show improvement in neurological status after starting ATT he was considered for surgical evacuation. Pyogenic brain abscess are often confused with the tubercular brain abscess and histopathological examination and demonstration of acid fast bacilli in the pus is therefore mentioned as the criteria. Our patient although started improving after drainaige but his diagnosis was confirmed after the histopathological report was available. Our patient improved with antitubercular therapy and was subsequently discharged without any focal neurological deficit after 2 month of stay in the hospital.

This case is reported in view of rare occurrence and successful treatment following accurate diagnosis.

CONCLUSION

Though brain abscess is an uncommon presentation of CNS tuberculosis , it's possibility of occurrence has to kept in minds thereby diagnosing it early and providing accurate treatment

REFERENCES

[1] Katti MK Pathogenesis, Med Sci Monit 2004;10(9):RA215-29.
[2] Dohe VB, Deshpande SK, Bharadwaj RS Indian J Tuberc 2010;57(2):102-3
[3] Lakatos B, Prinz G, Sárvári C, Kamotsay K, Molnár P, Abrahám A, Budai J. Orv Hetil 2011;152(15):588-96.

[4] Mondol BA, Siddiqui MR, Mohammad QD, Saha NC, Hoque MA, Uddin MJ Mymensingh, Med J 2010;19(2):312-22.
[5] Kumar R, Pandey CK, Bose N, Sahay S. Childs Nerv Syst 2002;18:118–23.
[6] Whitner RD. Arch Neurol 1978;35:148–55