CLINICOPATHOLOGICAL AND RADIOLOGICAL PROFILE OF SURGICALLY TREATED NEUROTUBERCULOSIS IN A TERTIARY CARE TEACHING INSTITUTE IN SOUTH INDIA

ABSTRACT

INTRODUCTION:

Tuberculosis (TB) is one of the most important communicable diseases worldwide causing significant morbidity and mortality despite modern anti-tuberculosis chemotherapy. Central nervous system tuberculosis (CNS-TB), the most severe form of extra-pulmonary TB, constitutes 1% of all newly diagnosed TB cases and about 6% of all extra-pulmonary TB in immunocompetent individuals. Routine diagnostic techniques often are time consuming and delay the diagnosis and management. In the present scenario, radiological investigations have become a very important tool in diagnosing and initiating treatment of CNS TB. This study outlines the clinicopathological and radiological profile of surgically treated CNS tuberculosis at a tertiary care institute and aims to provide some strategies for early diagnosis and management.

MATERIAL AND METHODS:

This retrospective analytical study was carried out at the Institute of Neurosurgery, Rajiv Gandhi Govt General Hospital. 141 consecutive patients who underwent surgery for CNS TB between August 2013 and June 2016 were included in this study.

RESULTS:

Out of the 141 patients with CNS TB who were surgically treated, 59 patients had hydrocephalus, 54 presented with tuberculomas and 28 had pott’s spine. There were 86 males and 55 females. The mean age was 33.8 years ranging from 1 year to 75 years. 76% of the patients with presented with solitary tuberculoma, most common in the supratentorial compartment (41 cases out of 54). Frontal lobe involvement was seen in maximum number of patients (15 cases). Headache was the commonest
manifestation of tuberculoma, seen in 48 patients (89%). All the tuberculomas were contrast enhancing on CT and MRI. Majority of the tuberculomas were hypodense on CT and T1 iso to hyper and T2 Hypo on MRI. Histopathologically, caseating granuloma was seen in maximum number of patients (37), Non caseating granuloma occured in 17. Majority of the patients had lipid lactate peak on MRS (33). The pathological type of granuloma correlated with the pre-operative MRI findings. Co-existing Pulmonary TB was present in 5 cases (9.2%). Post TBM communicating hydrocephalus was the commonest type of hydrocephalus seen in 44 patients (74.6%). There were 15 patients with Obstructive hydrocephalus, it was common in patients with tuberculoma. Based on the Modified British Research Council Clinical Criteria Grading, there were 44 patients in Grade II (GCS 14-11), 12 patients in Grade III (GCS less than 10) and 3 in Grade I (GCS 15). CT brain contrast showed basal exudates in 39 patients (66%). There were 3 cases with CSF AFB positive, the remaining 56 cases were negative for AFB in CSF. Majority of the patients had lymphocytes in CSF (47 cases). High protein and low sugar level was seen in the CSF of majority of patients with TBM hydrocephalus. Out of the 59 patients with hydrocephalus, pre-existing pulmonary TB was seen in 12 patients, 3 patients had positive contact history with tuberculosis, 6 patients had co-existing Diabetes and 2 patients were positive for HIV. Out of the 28 patients with pott’s spine, 15 cases had dorsal spine lesion, 8 had pott’s spine of the lumbar region and 2 cases in the cervical region. There were 3 cases of atlantoaxial tuberculosis. Dorsal spine was the commonest site of involvement in spinal TB, seen in 15 patients. Back pain was the commonest manifestation of Pott’s spine (82% ). The duration of pain ranged from 2 weeks to 1 year with an average duration of 4 months. Motor weakness occured in 16 patients, one patient had paraplegia. Only one patient had pre existing pulmonary TB. Out of the 141 patients with CNS TB, 12 patients had pulmonary tuberculosis, 4 patients had bilateral miliary mottling. Chest Xray was normal in the remaining 125 patients.
CONCLUSION:

Majority of the patients had solitary caseating tuberculoma which was iso to hyper in MRI T1 and hypo in MRI T2. Most of the Non caseating tuberculomas were hypo in MRI T1 and hyper in T2. Majority of the patients with TB Meningitis presented with communicating hydrocephalus. Basal exudates on contrast CT brain is diagnostic of TBM hydrocephalus when co-related with the clinical presentation and the CSF findings of lymphocytes, high protein and low sugar. Disseminated sytemic Tuberculosis and HIV positivity corelate with a poor clinical grade of presentation and had bad prognosis. Majority of the patients with spinal tuberculosis had Dorsal spine involvement. Back pain was the commonest presenting symptom of Spinal tuberculosis, occured early and lasted for a few months before the onset of sensory symptoms and weakness of limbs. MRI spine findings are diagnostic of tuberculosis in majority of cases and is the most important tool for guiding in the diagnosis and management of spinal tuberculosis. Majority of the patients with CNS TB do not have any pulmonary or extra-pulmonary tuberculosis.

KEYWORDS:

CNS Tuberculosis, Tuberculoma, TBM hydrocephalus, Pott’s spine, Surgically treated, Clinicopathology, Radiology