ORIGINAL RESEARCH PAPER Radiology



Role of CT and MRI in Granulomatous Infections of KI Brain ne

KEY WORDS: tuberculoma, neurocysticercosis, CT, MRI.

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ABSTRACT	 INTRODUCTION:- The introduction of CT and MRI holds major advance in tuberculoma and neurocysticercosis.MRI has been used in tuberculoma and neurocysticercosis for more specificity. This study aimed to assess the role of CT and MRI in patients of granulomatous infection. MATERIAL AND METHODS: 50 patients were selected in the department of Radiodiagnosis, Patna Medical College and Hospital Patna, with granulomatous infection (tuberculoma and neurocysticercosis) during period of 2014 to 2017. They were sent for CT and MRI. RESULT: MRI was more sensitive in detecting tuberculoma and neurocysticercosis. CONCLUSION: CT is initial modality in patients of Tuberculoma and neurocysticercosis but MRI with spectroscopy is almost definitive. 					

INTRODUCTION:

Neurocysticercosis(NCC) is an infection of brain caused by larval stage(cysticercus cellulosae)of Taenia solium. It is most common worldwide in pork eating population. It is endemic in certain part of Asia. Most infected patients are symptomatic. It usually presents in two forms intracranial and extracranial predominantly in (muscle) which is also known as disseminated neurocycticercosis. But 90% affects brain. A high index of suspicion should always be considered as the presentation may mimic other chronic infection or malignancy specially in immunocompromised patients. Similarly 70 to 80% population has been infected with M.Tuberculosis and new infection occurs at the rate of one per second. Many infections are asymotomatic. In 2007 there were an estimated 13.7million chronic active cases. Second most common cause of death due to tuberculosis. It usually present in two forms

pulmonary and extra pulmonary(inside brain tuberculoma). Here we discuss the CT and MRI for diagnosis of both neurocysticercosis and tuberculoma.

MATERIAL AND METHOD:

The study was done in department of Radiodiagnosis, Patna Medical College Hospital, Patna, India between 2014 to 2017. This study was conducted on 100 patients having brain infection reported during period of 2014 to 2017.100 patients who reported in the OPD having brain infection were subjected to CT and MRI. Ethical clearence was taken before the start of study. Consent was taken from all the patients. Patients having history of fever, epilepsy and headache were included in study. These cases are summarized in table1

Table:1 Clinical and Radiological features of all the cases (n=100)

S. N	AGE (YR)	TOTAL	CLINICAL PRESENTATION	CECT FINDING	MRI FINDING	MRI SPECTRO	CONCLUSION
1	0-5	16	Fever, convulsion	Ring enhancing lesion with perilesional edema, both in ncc and tuberculoma Nidus (scolex) is central	Ring enhancing lesion with perilesional edema on post contrast study in both ncc and tuber-culoma	In tuberculoma lipid lactate peak is high but not raise in ncc	MRI with spectro is more sensitive than CT scan
2	5- 10	24	weakness Fever, hydrocephalus convulsion	Ring enhancing lesion with perilesional edema both in nc c and tuberculoma	Ring enhancing lesion with perilesional edema both in NCC and tuberculoma	Lipid lactate peak increased in tuberculoma nd not increase in NCC	MRI with spectro more sensitive than CT scan
3	10-20	19	seizure Weak-ness unilateraly Altered mental status	Ring enhancing lesion with perilesional edema in both NCC and tuberculoma	Ring enhancing lesion with perilesional edema both in NCC and tuberculoma	in NCC Lipid lactate peak increased in tuberculoma nd not increase	MRI with spectro more sensitive than CT scan
4	20-30	11	headache fever seizure	Ring enhancing lesion with perilesional edema in both NCC and tuberculoma	Ring enhancing lesion with perilesional edema both in NCC and tuberculoma	in NCC Lipid lactate peak increased in tuberculoma nd not increase	MRI with spectro more sensitive than CT scan
5	30-40	14	Weakness Seizure fever	Ring enhancing lesion with perilesional edema in both NCC and tuberculoma	Ring enhancing lesion with perilesional edema in both NCC and tuberculoma	in NCC Lipid lactate peak increased in tuberculoma nd not increase	MRI with spectro more sensitive than CT scan

PARIPEX - INDIAN JOURNAL OF RESEARCH

VOLUME-6 | ISSUE-7 | JULY-2017 | ISSN - 2250-1991 | IF : 5.761 | IC Value : 79.96

6	40-50	7	Headache	Ring enhancing	Ring enhancing	in NCC Lipid lactate	MRI with spectro
			Fever	lesion with	lesion with	peak increased in	more sensitive than
			Seizure	perilesional edema in	perilesional edema in	tuberculoma nd not	CT scan
				both NCC and	both NCC and	increase	
				tuberculoma	tuberculoma		
7	>50	9	Fever seizure	Ring enhancing lesion with	Ring enhancing lesion with	in NCC Lipid lactate peak increased in	MRI with spectro more sensitive than
				perilesional edema in both NCC and tuberculoma	perilesional edema in both NCC and tuberculoma	tuberculoma nd not increase	CT scan

STATISTICAL ANALYSIS

Microsoft office 2007 was used for statistical analysis. Descriptive statistics like mean and percentages were used to interpret the data.

RESULTS

Of the total 100 patients maximum 24 in the age group 5 to 10 and very less patients in > 50 years age group noted that MRI with spectro is more sensitive than CT scan both in tuberculoma and NCC. Lipid lactate peak is high in tuberculoma but not raise in NCC. Maximum patients having seizure, fever, headachae and altered mental status.

DISCUSSION

There are two major clinical presentation of tuberculoma and neurocysticercosis intracranial and extracranial on MRI on T2 study shows rim appears hyperintense and center appears hypointense on post contrast study there is ring enhancement of both NCC AND TUBERCULOMA. No diffusion restriction(only abscess show diffusion restriction) on MRS study there is increased in lipid lactate lavel in tuberculoma but not in NCC.this shows MRI with spectroscopy show more sensitive than CT scan. The differential diagnosis may include neoplasm, arachnoid cystmeningitis, nerosarcoidand abscess neurocysticercosis present in 4 different stage vesicular, colloidal vesicular, granular nodular and nodular calcified. In case of NCC diagnosis is confirmed by serum Elisa or CSF long term morbidity upto 80%.mental retardation, paralysis, seizure, rigidity speech or visual defect.

CONCLUSION

CT scan is initial modality in patients of neurocysticercosis and tuberculoma inside brain.but MRI with spectroscopy having high sensitivity for diagnosis.

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