CT AND MRI FINDING IN HUMAN SPARGANOSIS

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INTRODUCTION

Cerebral Sparganosis has a wide range of imaging finding. We present a case which was initially diagnosis as cerebral tumor but found to be human cerebral Sparganosis intraoperatively.

CASE REPORT

A- 28 year old man first visited the neurological out patient clinic with the chief complaint of right leg weakness for six months. After one month duration, the symptoms progressed to right hemiparesis and seizure. Neurological examination revealed right hemiparesis which was prominently in the proximal muscles of both upper and lower extremities. There was an increased deep tendon reflexes. The Babinski's reflex showed plantar response on the right side. The routine laboratory such as CBC, electrolytes urine analysis and stool examination for parasite were normal. CT brain showed a lesion in the left frontoparietal region measuring about 3x4x5 cm. With an associated surrounding edema. There were multiple small calcification in the lesion and surrounding white matter. There was a mild enhancement of the lesion post contrast. The MRI brain demonstrated this lesion to be of low signal intensity on T_1WI and of high signal intensity on T_2WI. After Gadolinium injection, the left frontoparietal region showed an enhancement (Figure1). Follow up CT brain two months later showed mild increased in size of the lesion (Figure2). The symptom persisted dyspite of the treatment with 10 mg Dilantin tablet. A diagnosis of brain tumor was made and the patient was underwent surgery. The operative finding consisted of a living larva with scolex in the left frontoparietal cortex with surrounded thickening of the membrance and inflammatory tissue. Histologically the arachanoid tissue was shown to be an infected wall with predominantly eosinophilic infiltrtion. The clinical symptoms were improved after operation and rehabilitation.

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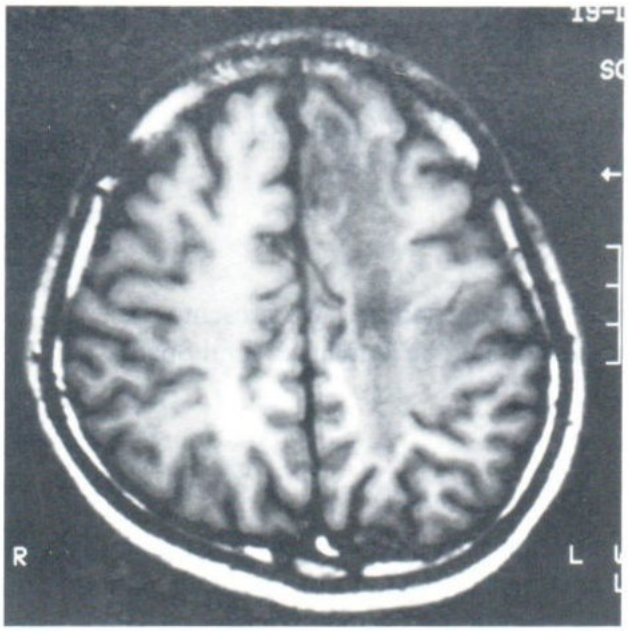

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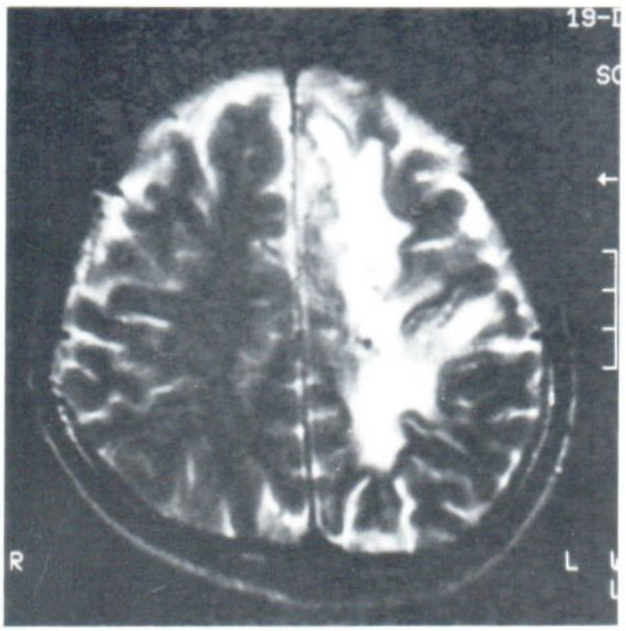

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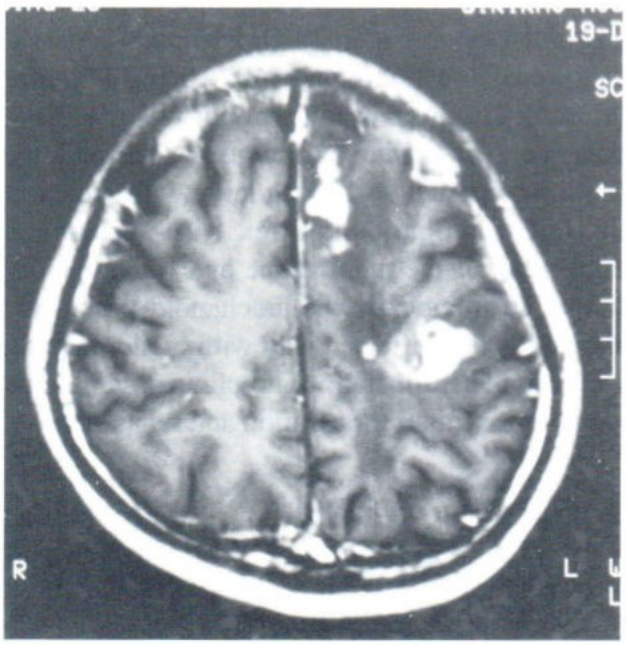

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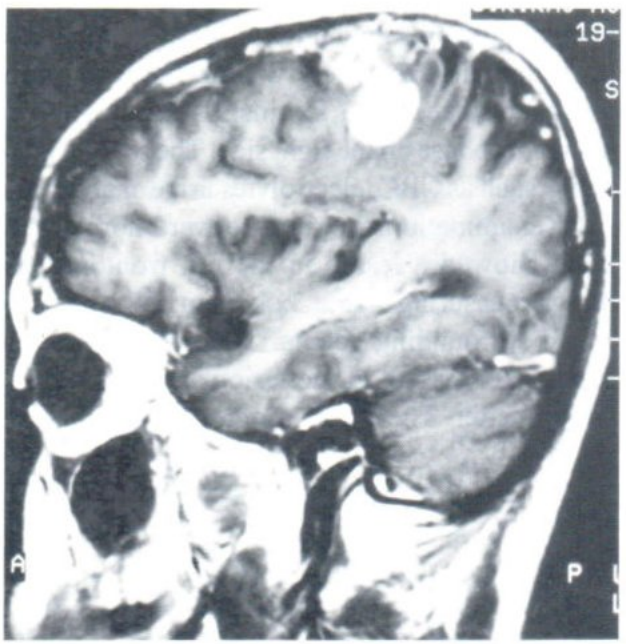

1D

Fig.1. MRI brain (A: axial T1WI, B:axial T2WI, C:axial T1WI+Gd, D:sagital T1WI+Gd) showed Lt. fronto-parietal lobe lesion which had low SI in T1WI ,high SI in T2WI and enhanced after Gd injection.

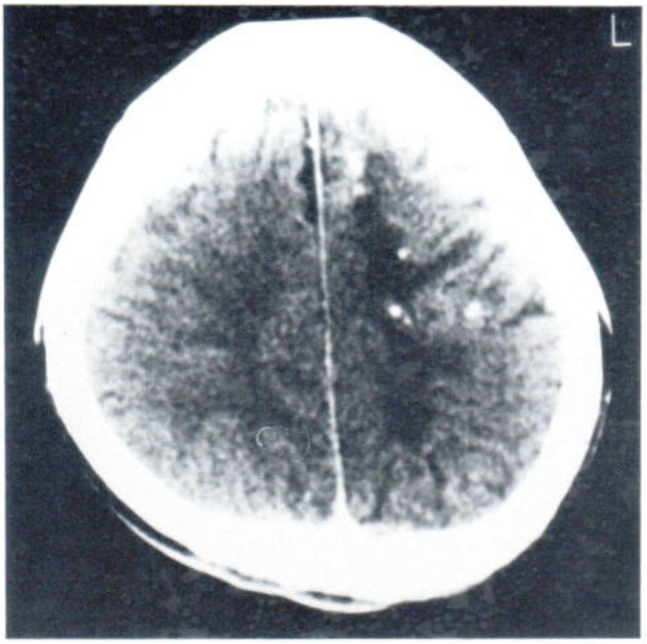

Fig.2. The axial NECT brain showed hypoattenuation at Lt. fronto-parietal surrounded with multiple calcifications.

DISCUSSION

Sparganosis is an infection caused by Pseudophyllideau tapewarm of genera Spirometra and Diphyllobothrium.[1] The second stage larva is called Sparganum Spirometra mansoni which is most commonly found in China, Japan, South East Asia,[1] while S. mansonoides is more commonly found in United State.

The majority of human infestration involves the subcutaneous tissue. Other areas involved are the pleural cavity, abdominal viscera, urinary tract, scotum, and eye. CNS involvement is extremely rare in these parasites. However CNS involvement cause a high morbidity and mortality. Therefore radiological investigation is useful, but the findings are varied and non -definited.

In 1996. - Dong Gyu Kim et, al reported 17 cases of cerebral Sparganosis whereby the scan revealed low-density lesion in white matter with adjacent ventricular dilatation, representing degeneration of brain tissue. Contrast enhancement CT demonstrated irregular enhancement indicative of inflammatory granulation with small punctuated calcifications being demonstrated in 13 cases. In 2 patients followed up CT scan demonstrated enhanced lesions at a different site, suggestive of migration of the lesion. The MRI findings were of widespread white matter degeneration, cortical atrophy with consequent ipsilateral ventricular enlargement and decreased volume of ipsilateral crus cerebri, secondary to long duration of the disease. On T_2WI, a mixed high-signal lesion with central low-signal foci was demonstrated. Post contrast images demonstrated irregular dense enhancement of the central foci, indicative of active granulation surrounding the worm in the subcortical area[2]

In 1998 S.C. Jeong et, al reported the cerebral Sparganosis whose CT brain showed high density lesion in Rt frontoparietal area suggestive of a hematoma. The MRI brain showed multiple cystic low-signal lesions surrounded by the area of decreased signal on T_1WI with rim enhancement. T_2WI demonstrated multiple high-signal lesion surrounded by an area of diffuse increased signal changes.[3]

In our case report the CT and MRI findings mimic with those of the brain tumor.

From these data, it was shown that the radiologic findings of cerebral Sparganosis can be mimic with the cerebral hemorrhage, brain tumor or infective processes of the CNS.

CONCLUSION

The cerebral Sparganosis is an extremely rare disease but causes a high morbidity and motility. Radiological finding remain the mainstay in the diagnosis with its varying presentation. One of its presentations is also mimic

with a brain tumor. It should be kept in the differential diagnosis, especially in patients from the East or South East Asia.

REFERENCE

1. Dong Gyu Kim, M.D. et, al : Cerebral sparganosis, Clinical manifestations, treatment, and outcome, J Neurosurg 85:1066-71,1996.
2. Jan J. Dunn and Philip E.S. Palmer : Sparganosis. Seminar in Roentgenology 33 (1): 86-88 Jan 1998.
3. S-C Jeang MD et, al : Cerebral Sparganosis with intracerebral hemorrhage. A case report. Neurology (50). 503-6 Feb 1998.