

# **BRAIN GRAY MATTER HETEROTOPIA WITH HEMIPARESIS**

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## **Abstract**

Definition: Heterotopia (H.) of gray matter is one of congenital migration brain anomalies in which there is a clumps of gray matter being located in a wrong place of the brain (white matter). Aim: This case has three significant points: It is a rare condition. It is one of very good examples for the superiority of MRI Brain to CT Brain in diagnosis of parynclymal brain disease. The most unique point for this case is the presence of hemi paresis which is un known manifestation for H. Conclusion: we have to think about H. as a cause of hemi paresis.

## **Introduction**

**H**eterotopia (H): It is one of migration anomalies of brain that include, Lissencephaly, Schizencephaly and Heterotopias. It is an abnormal foci of gray matter which may be located anywhere from the subcortical white matter to the subependymal lining of ventricles<sup>1</sup>. "Hetero" is from Greek "different", "topia" from place, thus heterotopia means "different place"<sup>2,3</sup>. Some say it might be due to arrested migration of gray matter neurons to the cerebral cortex<sup>4</sup>. These disorders often have genetic cause and may be sex linked, H. often present on MRI as abnormal gray matter located periventricular bilaterally<sup>4-8</sup>. Heterotopia is of three types: Subependymal, subcortical and band H.

Subependymal: also called Peri ventricular, it is the commonest type, usually cause seizure between 10-20 years of age, they can be small single node or a large number of nodes, can exist on either or both sides of brain at any point along ventricles margin, can be small, large, single, multiple, can form large wavy or curved mass<sup>6</sup>.

Symptoms are similar in both sexes which is epilepsy, except in men with X-linked which will have associated anomalies such as developmental anomalies.

Subcortical: it is present as "foci", patient is epileptic and if bilateral, patient is mentally retarded<sup>5</sup>.

Band H. need good radiological skill<sup>6</sup>.

## **Treatment**

Heterotopia has no specific treatment, the treatment is symptomatic as medical treatment for epilepsy, in minority of cases patient can get benefit from frontal lobe resection in those with Periventricular lesions<sup>2</sup>.

## **Case Presentation**

A 30 year old male, epileptic since 15years ago (Partial complex seizure) presented with hemi paresis. The patient is mentally normal, he is on carbamazapine tab. 200 mg/day since that time, the condition started as sensory manifestations in form of numbness, parasthesia at left side & within 2-3 days started to be motor as left hemiparesis. The patient was hospitalized and kept on

mannitol 200cc/8h.(20%) and 4mg/16h dexamethazone, in addition to neurotonics and physiotherapy. After 7days, the patient start improving but after about 7days recurrence happened but regain his normal state after 2days on the same treatment and he is doing well now.

The first investigation done for this patient was C.T. Brain which was normal apart from small right periventricular hypodense to isodense mass which was unconvulsive. MRI of brain give dramatic different picture in form of mixed subcortical and subependymal masses. Other investigations are EMG; NCS which were normal, other general medical investigations were normal.

In conclusion; H. is a rare condition, usually discovered accidentally during imaging for epileptic patients. It is generally fixed in both it is occurrence & symptoms that once symptoms occur it doesn't tend to progress. Varying forms of surgical resections of the affected area have been reported, although such surgery can't reverse developmental relief from seizure<sup>2-4</sup>, H. manifestations are usually restricted to epilepsy, mental retardation & loss of some of motor skills. It was not reported that H. can cause hemiparesis or at least unilateral sensory manifestations, which may be added as a new manifestation for this condition.

Fig.1: CT brain (on the left) showing a small right periventricular lesion (black arrow). MRI brain on the right showing H. extending from sub cortical to the sub endymal region ( white arrow ) the area which appear normal on C.T.

Fig.3: Gray matter H. in coronal section (arrow)

Fig.2: Gray matter H. in saggital section (arrow).

## References

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