Heterotopic Gray Matter
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Section: Neuroradiology
Imaging Technique: MR
Case Type: Clinical Cases
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Patient: 22 years, female

Clinical History:
Diplopia and recurrent episodes of hypoesthesia of the right leg, and paresthesia of the right hand. Occasionally, urinary incontinence and shaking of the extremities, lasting for 10 minutes. No history of trauma.

Imaging Findings:
The patient was admitted to the hospital with complaints of diplopia and recurrent episodes of hypoesthesia of the right leg, and paresthesia of the right hand. Occasionally, urinary incontinence and shaking of the extremities, lasting for 10 minutes, occurred. Upon clinical examination, no abnormalities were found. There was no trauma or other relevant disease in her personal history. MRI of the brain was performed.

Discussion:
Gray matter heterotopias are collections of normal neurons in an unusual location, due to an arrest in fetal neuronal migration. The most common locations of ectopic gray matter are the subependymal region of the lateral ventricles and the white matter just below the cortex. Patients with subependymal heterotopia tend to have mild clinical symptoms, consisting of mixed partial –complex and tonic-clonic seizures, usually starting in late childhood or in the second decade of life. Migrational disorders can be diagnosed accurately by MRI. Ectopic locations of gray matter present as well-circumscribed, nodular, subependymal masses, which are isointense with cortical gray matter on all imaging sequences. The nodules may be single or multiple, ranging in size from 0.5 up to 3 cm. There is no contrast enhancement. Occasionally the disorder is accompanied by mild ventricular dilatation and partial or complete absence of the corpus callosum. In the differential diagnosis, subependymal hamartomas of tuberous sclerosis can be excluded by the lack of contrast enhancement. Hamartomas are slightly irregular and not isointense with gray matter on all MR images. The MRI characteristics of subependymal heterotopia are sufficiently typical for an accurate diagnosis. Further investigations are not required.

Differential Diagnosis List: Gray matter heterotopia

Final Diagnosis: Gray matter heterotopia

References:
Description: Axial fast SE proton density-weighted image: multiple, well-circumscribed, ovoid nodules lining the lateral ventricles, isointense with cortical gray matter. Origin:
Description: Axial fast T1-weighted image: multiple, well-circumscribed, ovoid nodules lining the lateral ventricles, isointense with cortical gray matter. Origin:
**Description:** Axial fast echo T1-weighted image: multiple, well-circumscribed, ovoid nodules lining the lateral ventricles, isointense with cortical gray matter. **Origin:**
Description: Coronal inversion recovery image: Multiple, well-circumscribed, ovoid nodules lining the lateral ventricles are seen. These nodules are isointense with cortical gray matter on all sequences. The MRI findings are indicative of subependymal gray matter heteropia. Origin: