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Bilateral Thalamic Glioma in 17-Year-Old Female Patient: A Case report

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Introduction

Bilateral thalamic glioma is one of the rarest tumors among brain tumors. Of the total brain tumors, primary thalamic gliomas account for about 1-1.5% and bilateral thalamic glioma is even rarer. Most patients are found in adults and only 25% of them are under the age of 15. Bilateral thalamic gliomas differ clinically and radiologically from other gliomas. Personality changes, mental decline, memory impairment, emotional lability, cognitive and behavioral impairments are shown. Radiotherapy is the main treatment option rather than the surgical intervention, which is limited to a role of biopsy, because of the deep location of the lesion and the complexity of the structure. We report a 17-year-old female patient with bilateral thalamic glioma, who has cognitive dysfunction and personality change.

Case

In September 2017, A 17-year-old female presented with bradykinesia, daytime somnolence, apathy and insidious personality change for a few months. Two weeks later, she began to show dysarthria and decreased verbal fluency. On the neurological examination, disorientation, recent memory impairment, and dyscalculia were noted. The manual muscle test was Medical Research Council(MRC) grade III on both upper and lower extremities. Magnetic resonance imaging (MRI) of the brain showed enlarged bilateral thalamus with iso-signal intensity lesion on a T1-weighted image and with hyper-signal intensity lesion on a T2-weighted image. MRI examination revealed the involvement of both thalami, hypothalamus, right midbrain, both frontal lobes without hydrocephalus. Brain computed tomography (CT) scan was performed for localization, however, there was no contrast enhancement associated with the brain lesion. MR spectroscopy of both thalami showed increased Choline(Cho)/Creatinine(Cr) ratio with decreased N-acetyl aspartate(NAA) peak. The patient underwent stereotactic biopsy of the right frontal lesion. Histopathological examination revealed high-grade Glioma, WHO grade III, and the patient was referred for radiotherapy of 1000cGy, 4 fractions and 4000cGy, 20 fractions and later on for chemotherapy. After that, she was transferred to our department for intensive rehabilitation. During the five-month of the clinical follow-up period, the patient was stable without significant change in the clinical status except for right visual disturbance and left hearing impairment. Chemotherapy and intensive rehabilitation are ongoing and follow-up brain MRI is planned.

Conclusion

Clinical and radiologic features of bilateral thalamic glioma differ from those of unilateral thalamic tumors. Although bilateral thalamic glioma is extremely rare, it is important to

differentiate the patients with personality change, memory impairment from others. MRI is essential in the diagnosis a hypo-intense to an isointense lesion in T1-weighted images and a homogeneous hyper-intense lesion in T2 images.

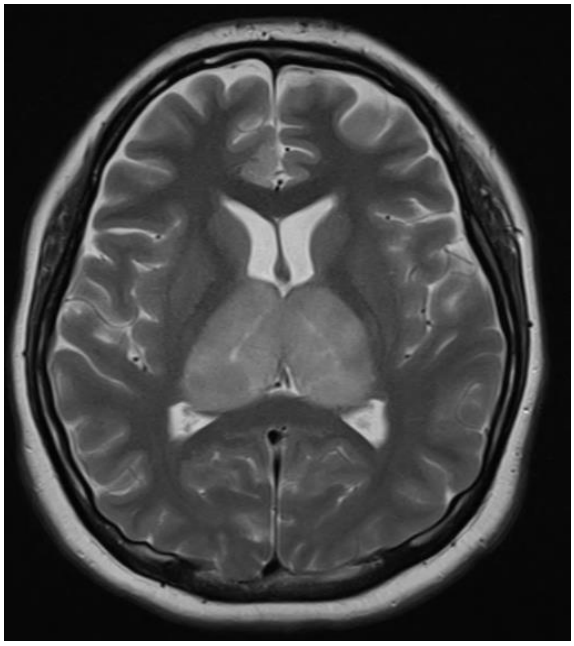

Figure 1A. T2-weighted MRI sequence shows hyperintensity of both thalami.

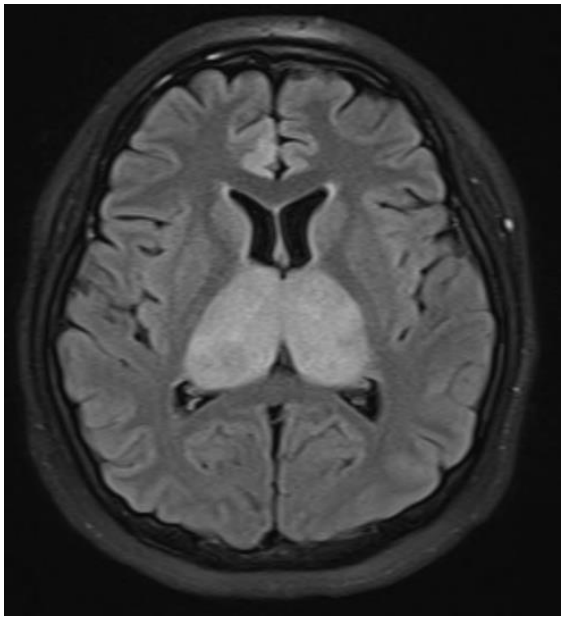

Figure 1B. Axial FLAIR sequence shows prominent bilateral hyperintense thalami.

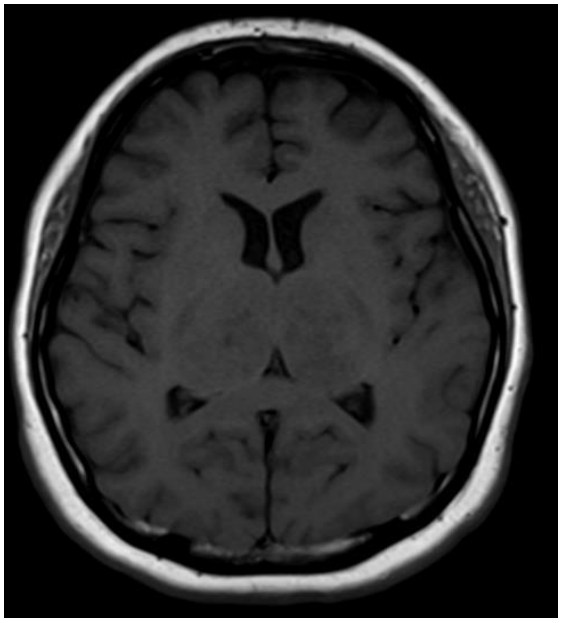

Figure 1C. T1-weighted image shows isointensity of both enlarged thalami.