Glioblastoma Multiforme Developed during Chronic Deep Brain Stimulation for Parkinson Disease.


Abstract

BACKGROUND: In this reported case, 7 years after the start of deep brain stimulation (DBS) of the bilateral subthalamic nucleus (STN), glioblastoma multiforme (GBM) developed around the implanted DBS lead.

CASE REPORT: The brain tumor formed from the subcortical white matter to the corpus callosum bilaterally around the DBS lead but did not extend in the direction of the contact points of the lead. The GBM showed a typical invasion pattern of the butterfly type. We report the first case of GBM that developed 7 years after the start of STN-DBS.

CONCLUSION: Considering the low rate of GBM occurrence in association with DBS, the location of the glioma, and the pattern of tumor invasion, we speculate that GBM developed spontaneously and extended to some degree around the DBS lead. Moreover, there is a very slight possibility that continuous electrical brain stimulation itself induced the development of the brain glioma.

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