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A Case of Long-Term Survival After Glioblastoma, IDH-Wild Type

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Abstract

Introduction: Glioblastoma is a uniformly lethal primary central nervous system neoplasm. Despite the increased understanding of its pathophysiology and treatment advancements, median overall survival for patients with glioblastoma, IDH-wild type remains 14 to 21 months from diagnosis.

Case report: We present the case of a 48-year-old female who presented with a focal seizure and was found to have a right frontal lobe mass on the brain magnetic resonance imaging. She underwent gross total resection and received a histological diagnosis of glioblastoma. She received radiotherapy and 6 cycles of carmustine (BCNU). Seventeen months later, she developed left hemiparesis. Imaging was concerning for tumor progression, and she was treated with 1 cycle of mechlorethamine, vincristine (oncovin), procarbazine, and prednisone (MOPP). Subsequent surveillance imaging demonstrated a therapeutic response. Twenty-seven years after her glioblastoma diagnosis, she developed status epilepticus and died from respiratory failure. Neuropathology on autopsy demonstrated extensive treatment-related changes but no evidence of recurrent glioblastoma. Genomic testing performed over 30 years after her original diagnosis revealed a profile diagnostic of glioblastoma, IDH-wild type per 2021 World Health Organization criteria.

Conclusions: This patient is one of the longest-known survivors of glioblastoma, IDH-wild type, with pathologic confirmation of glioblastoma at the time of her resection and no evidence of residual disease 26 years after her last treatment. She presented with multiple factors associated with long-term glioblastoma survivorship, including female sex, young age, high Karnofsky score, and multimodal therapy. This case shows that long-term survival after glioblastoma diagnosis is possible and likely mediated through a combination of individual, tumor, and treatment factors.