

Journal Article



Use of Gliadel (BCNU) Wafer in the Surgical Treatment of Malignant Glioma: A 10-Year Institutional Experience

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Frank J. Attenello¹, Debraj Mukherjee¹, Ghazala Dattoo¹, Matthew J. McGirt¹
 **, Eileen Bohan¹, Jon D. Weingart¹, Alessandro Olivi¹, Alfredo Quinones-Hinojosa¹ and Henry Brem¹**

(1) Department of Neurosurgery, Johns Hopkins School of Medicine, Baltimore, MD 21205, USA

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Abstract

Background Gliadel (polifeprosan 20 with carmustine [BCNU] implant) is commonly used for local delivery of BCNU to high-grade gliomas after resection and is associated with increased survival. Various complications of Gliadel wafers have been reported but not consistently reproduced. We set out to characterize Gliadel-associated morbidity in our 10-year experience with Gliadel wafers for treatment of malignant glioma.

Methods We retrospectively reviewed records of 1013 patients undergoing craniotomy for resection of malignant brain astrocytoma (World Health Organization grade III/IV disease). Perioperative morbidity occurring within 3 months of surgery was assessed for patients and compared between patients receiving versus not receiving Gliadel wafer. Overall survival was assessed for all patients.

Results A total of 1013 craniotomies were performed for malignant brain astrocytoma. A total of 288 (28%) received Gliadel wafer (250 glioblastoma multiforme (GBM), 38 anaplastic astrocytoma/anaplastic oligodendroglioma (AA/AO), 166 primary resection, 122 revision resection). Compared with the non-Gliadel cohort, patients receiving Gliadel were older (55 ± 14 vs. 50 ± 17 , $P = .001$) and more frequently underwent gross total resection (75% vs 36%, $P < .01$) but otherwise similar. Patients in Gliadel versus non-Gliadel cohorts had similar incidences of perioperative surgical site infection (2.8% vs. 1.8%, $P = .33$), cerebrospinal fluid leak (2.8% vs. 1.8%, $P = .33$), meningitis (.3% vs. .3%, $P = 1.00$), incisional wound healing difficulty (.7% vs. .4%, $P = .63$), symptomatic malignant edema (2.1% vs. 2.3%, $P = 1.00$), 3-month seizure incidence (14.6% vs. 15.7%, $P = .65$), deep-vein thrombosis (6.3% vs. 5.2%, $P = .53$), and pulmonary embolism (PE) (4.9% vs. 3.7%, $P = .41$). For patients receiving Gliadel for GBM, median survival was 13.5 months after primary resection (20% alive at 2 years) and 11.3 months after revision resection (13% alive at 2 years). For patients receiving Gliadel for AA/AO, median survival was 57 months

after primary resection (66% alive at 2 years) and 23.6 months after revision resection (47% alive at 2 years).

Conclusion In our experience, use of Gliadel wafer was not associated with an increase in perioperative morbidity after surgical treatment of malignant astrocytoma.

Keywords Gliadel - Polymer delivery - Complications - Malignant astrocytoma

✉ **Matthew J. McGirt**
Email: mmcgart1@jhmi.edu

References secured to subscribers.

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