

2-2021

Deep Supratentorial Extension is Associated with Poor Clinical Outcomes After Glioblastoma Resection

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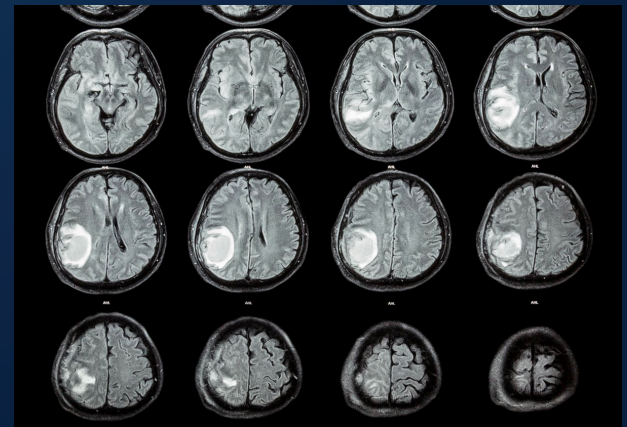
**Sidney Kimmel
Medical College™**
at Thomas Jefferson University

Glioblastoma with deep supratentorial extension is associated with worse overall survival

Adam Barsouk, Michael Baldassari, Lohit Velagapudi, Donald Ye, MD, Kevin Judy,
MD*

- GBM: heterogenous disease w/ few prognostic risk factors¹ and a 5-year survival rate of <5%²
 - Tx: Attempted gross total resection (GTR) followed by chemoradiation
- **Deep supratentorial extension (DSE):** GBM extension into the basal ganglia, thalamus, corpus callosum, internal capsule, hypothalamus, caudate, or putamen as identified on preoperative MRI
- Certain DS structures associated with worsened survival-- never clinically evaluated as prognosis of DSE³

<https://www.the-scientist.com/news-opinion/immune-activating-gene-therapy-for-glioblastoma-66273>



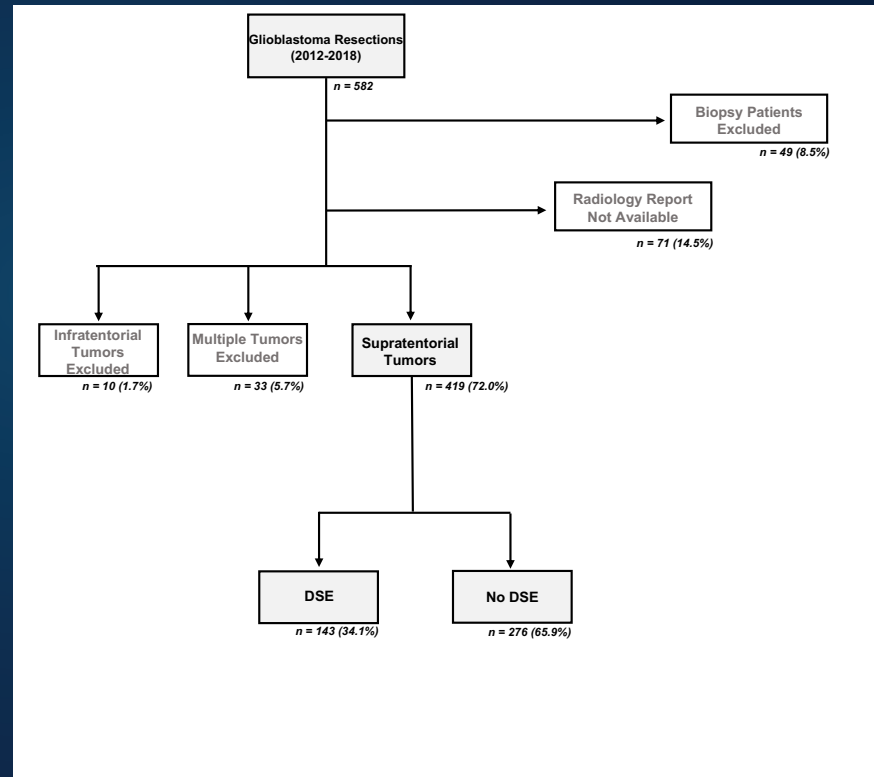
Objectives & Hypothesis

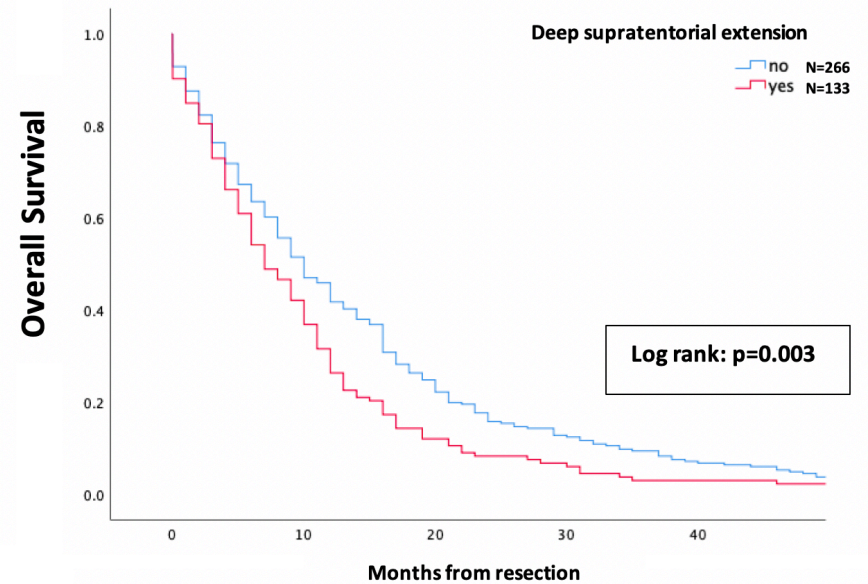
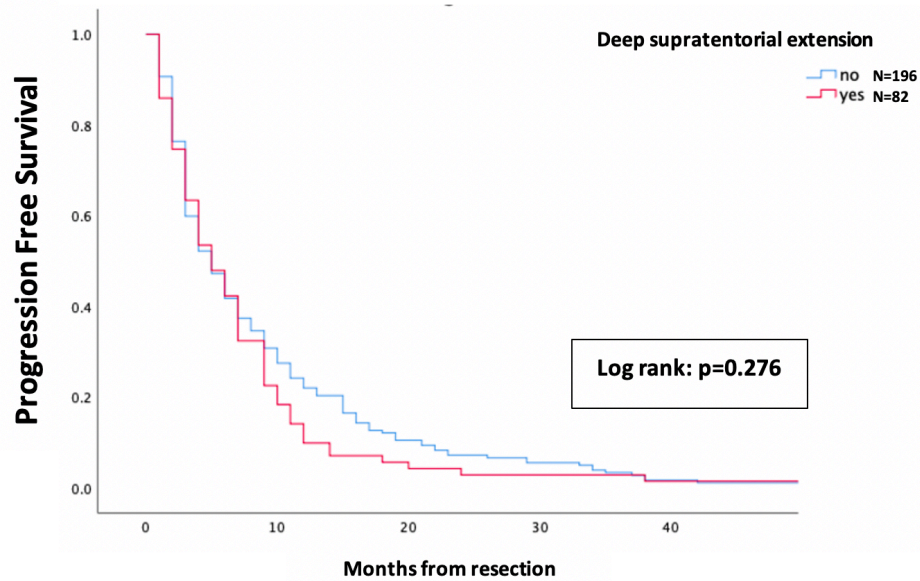
- 1. Quantify effect of GBM deep supratentorial extension on post-resection **overall survival (OS)**
 - We hypothesize that DSE GBM will have worse PFS and OS
- 2. Evaluate whether specific DS structures or number of structures involved portend worsened survival
 - We hypothesize that Thalamus, Corpus Callosum involvement will portend worse survival
 - We hypothesize that involvement of more structures will portend worse structure

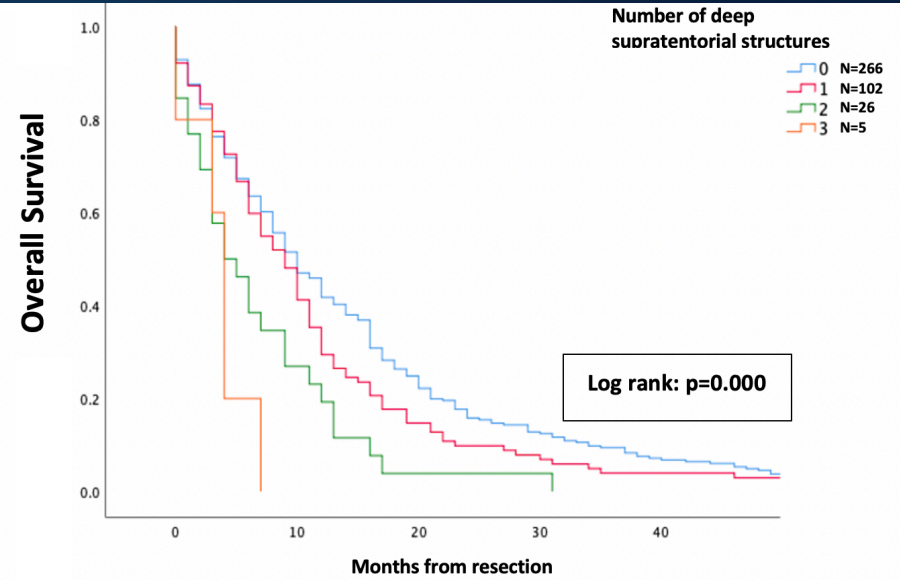
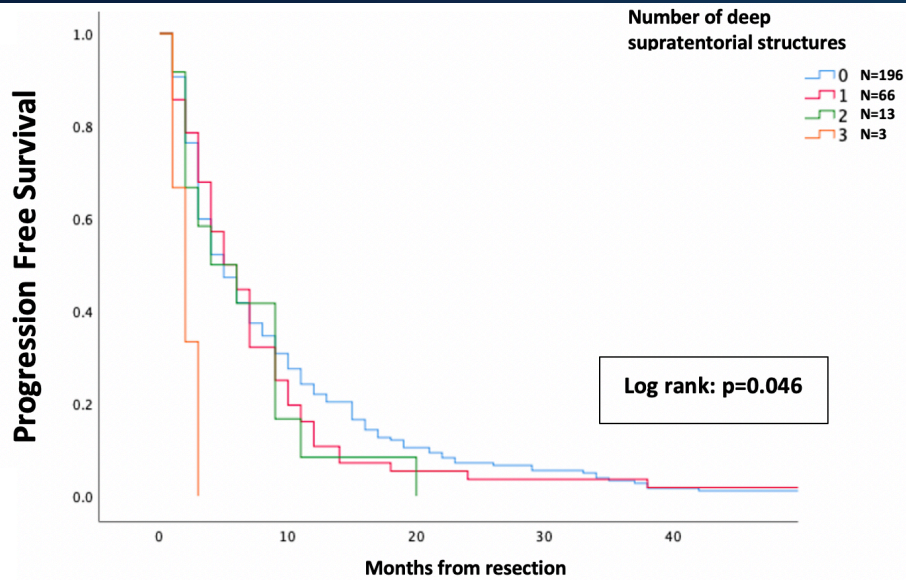


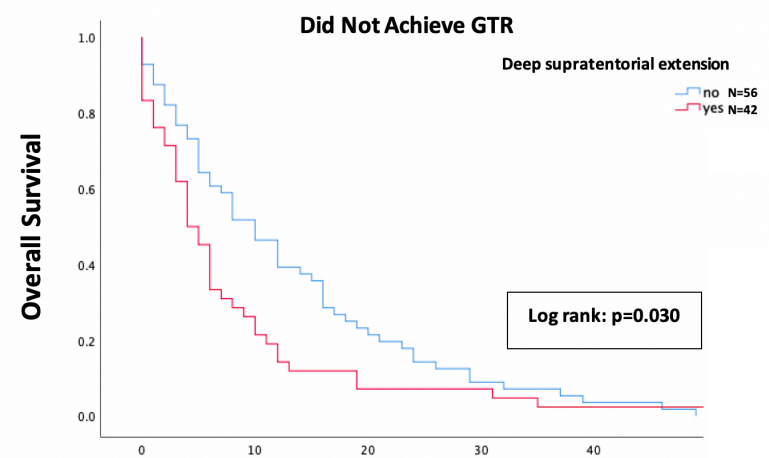
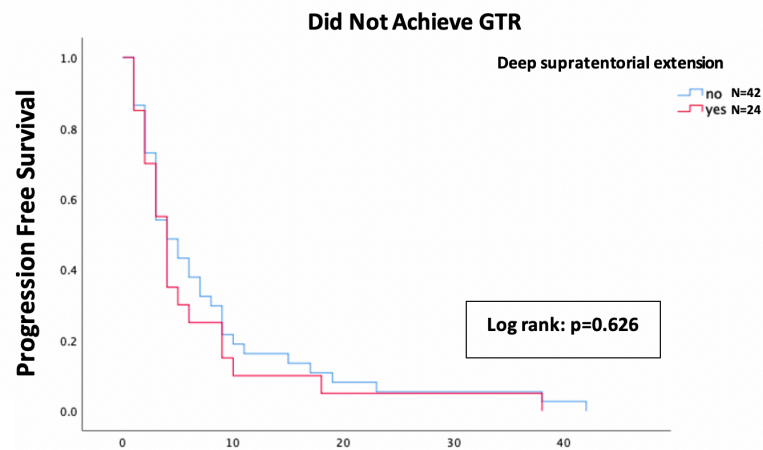
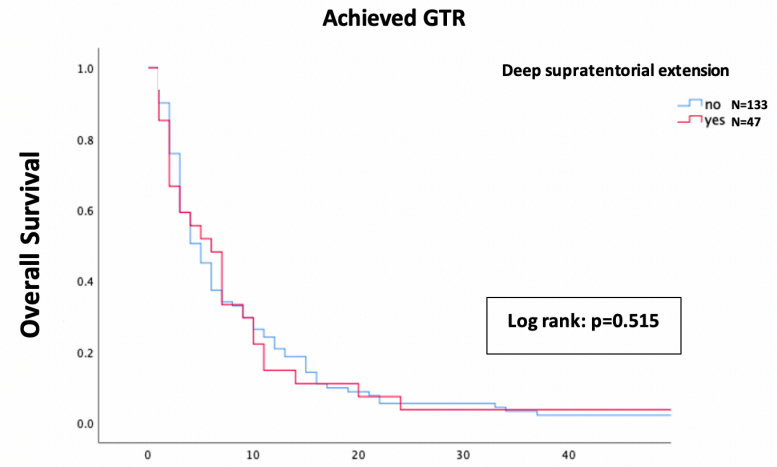
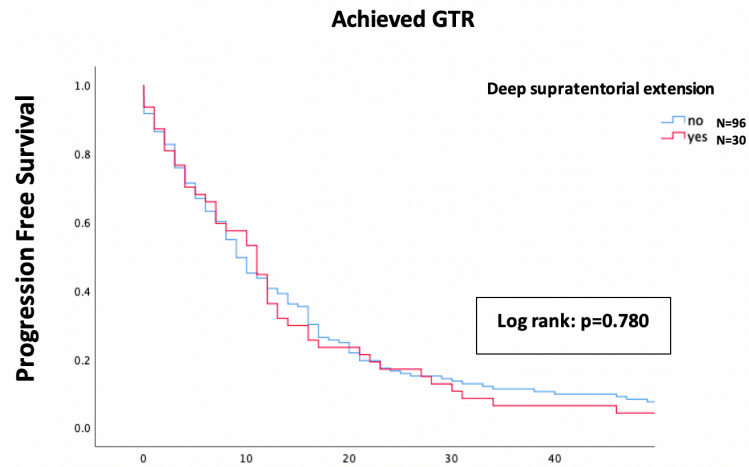
Approach

- Identify, exclude and stratify patients as shown
- Extract de-identified data from Epic and public obituaries
- Calculate **overall survival** as primary endpoint
- Assess statistical significance w/ log rank Kaplan Meier analysis









- DSE is valuable negative prognostic indicator
 - DSE associated with worse OS, **not** PFS
 - 2+ DS structures associated with worse OS and PFS
 - Thalamic involvement associated with worse OS and PFS
- DSE increases utility of attempting GTR
 - DSE portends worse OS **only** among those **without GTR**

Future Directions

- Convey prognostic importance of DSE and GTR to neurosurgeons
 - Abstracts submitted to 2021 AANS conference
 - Manuscript submitted to World Journal of Oncology
- Further investigate significance of specific structure involvement, new surgical techniques for improving odds of GTR

Acknowledgements

- Jefferson Neurosurgery Department for facilitating and guiding this research project
- Jefferson University for providing statistical software, Epic access, and guidance on research through the SI program
- My current and former research mentors