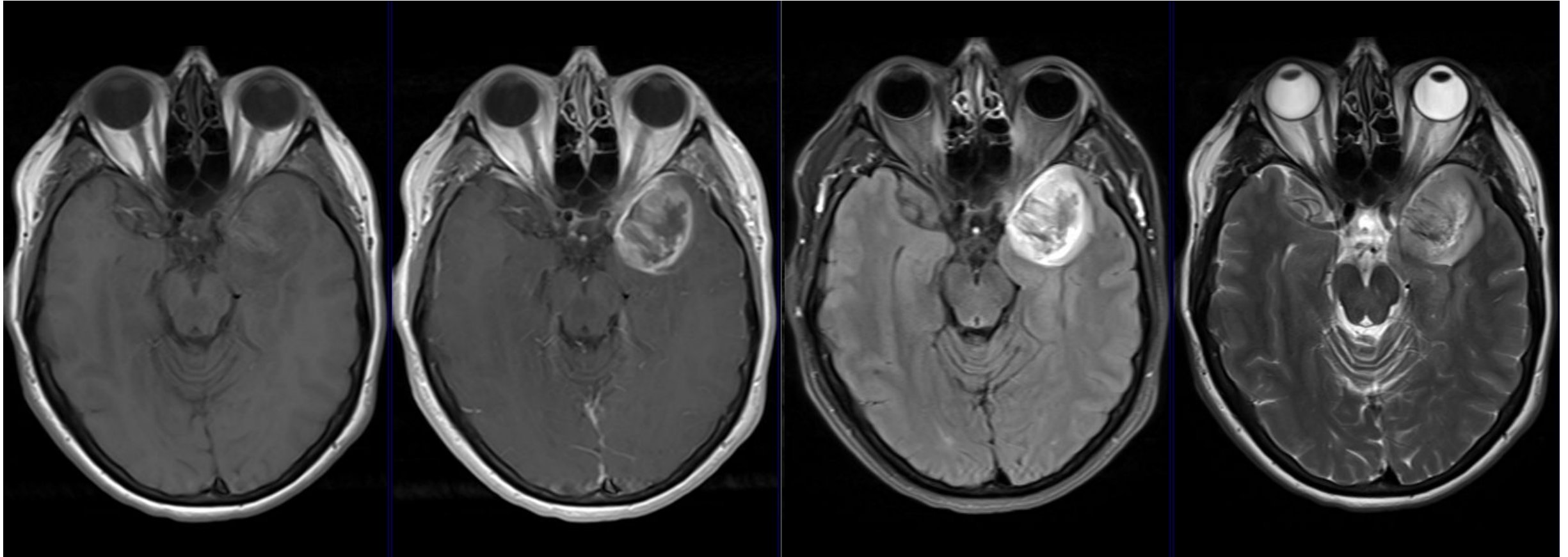


Glioblastoma

Presentation

- Female in their 50s presented with progressively worsening word finding difficulties and left sided headaches
- Neuroimaging revealed left temporal heterogeneous enhancing mass lesion
- Left side Craniotomy for tumor resection
 - Some evidence of residual enhancement posterior to the resection cavity

MRI on presentation



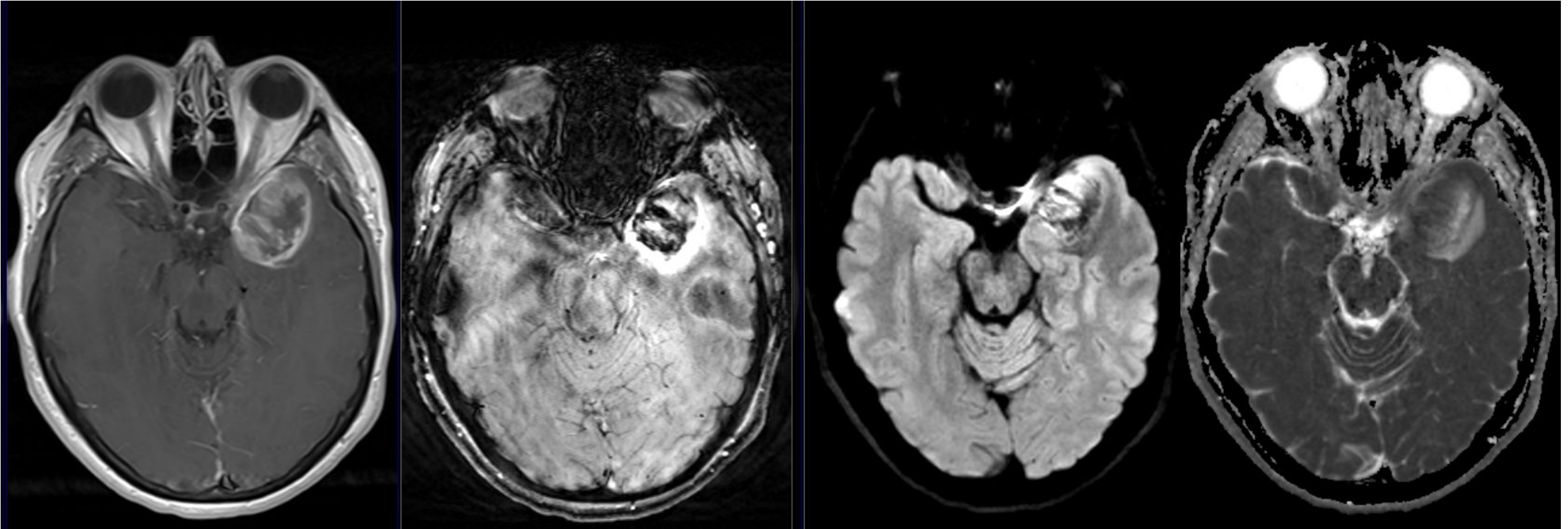
T1 pre

T1 post

T2 FLAIR

T2

MRI on presentation



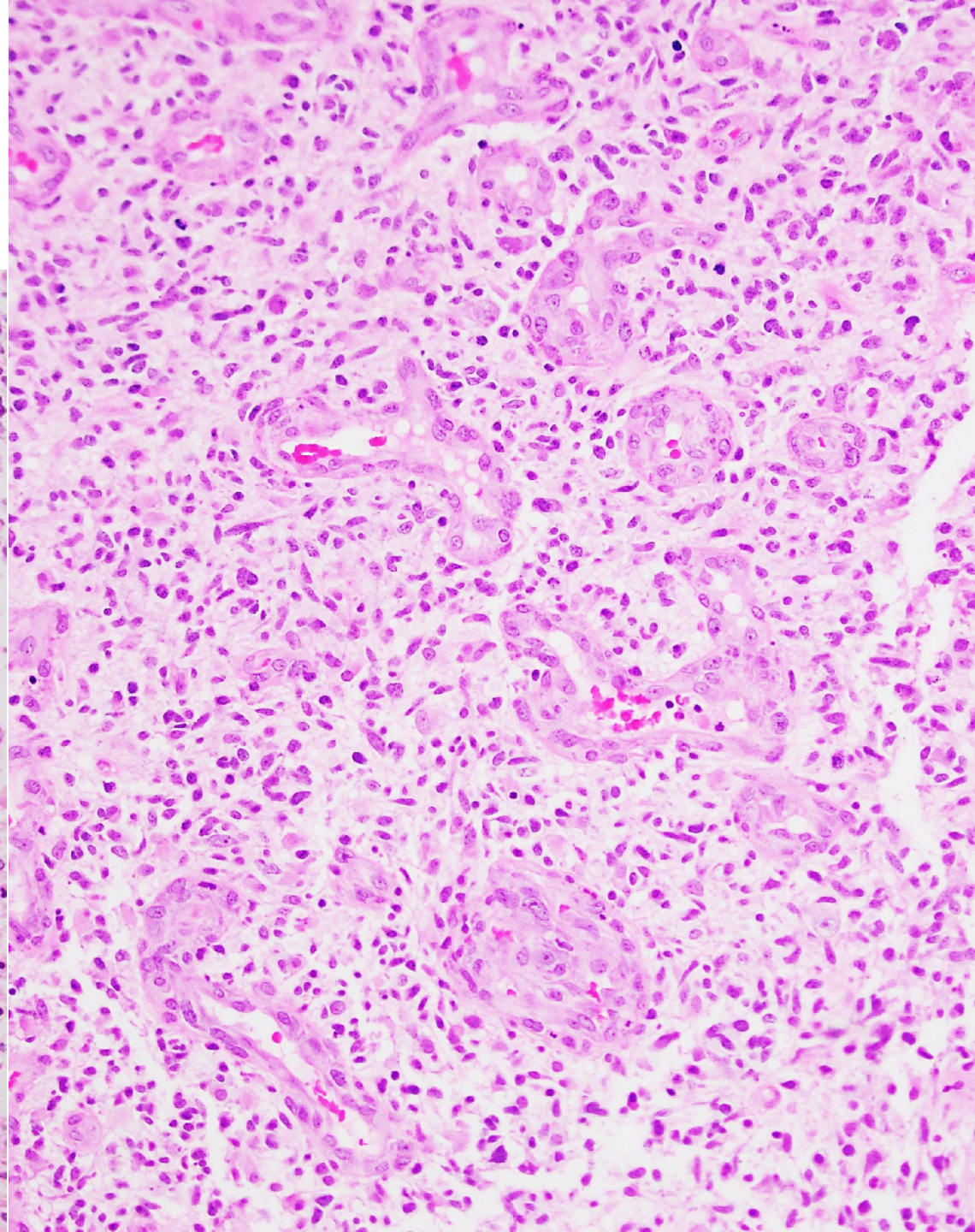
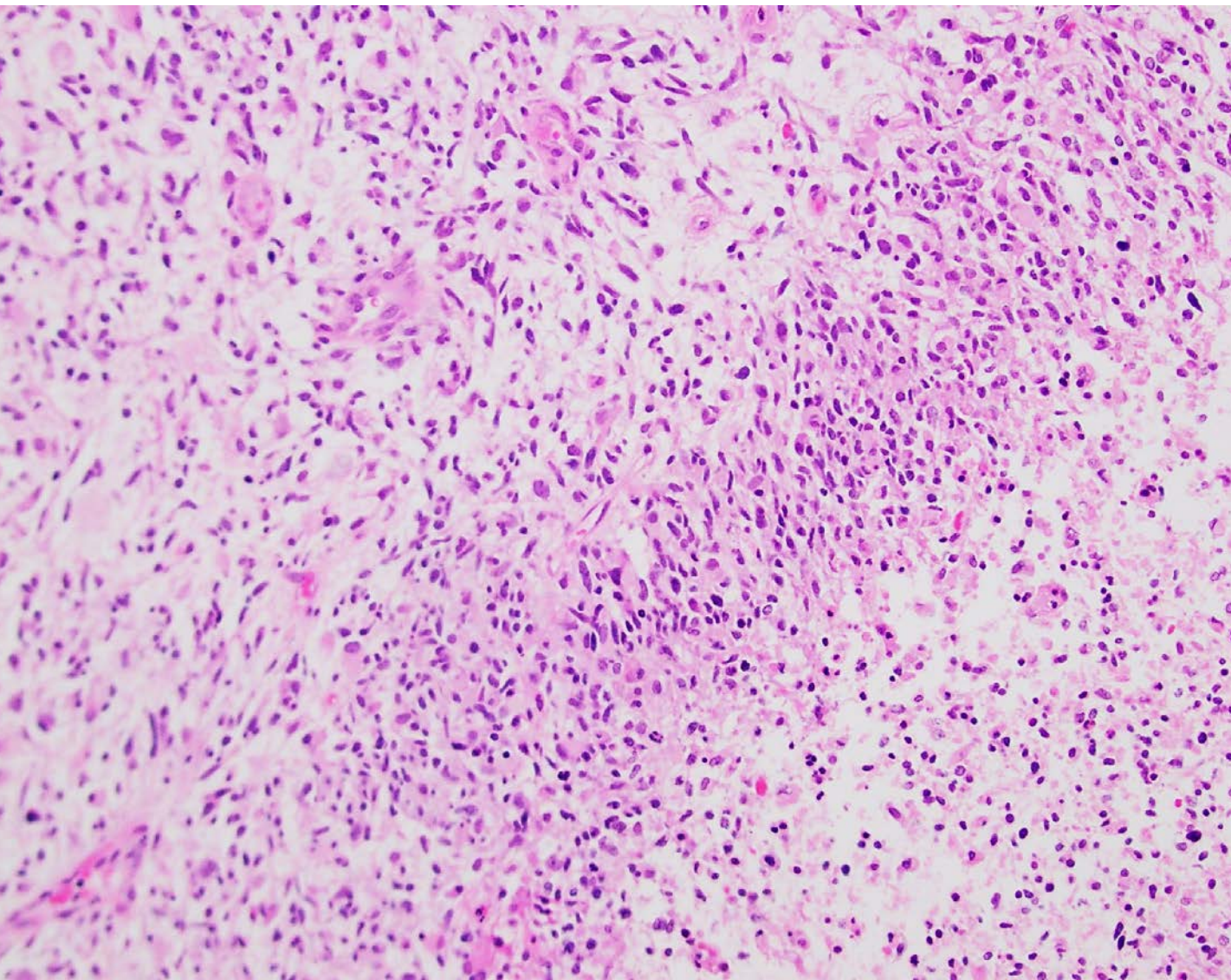
T1 post

SWI

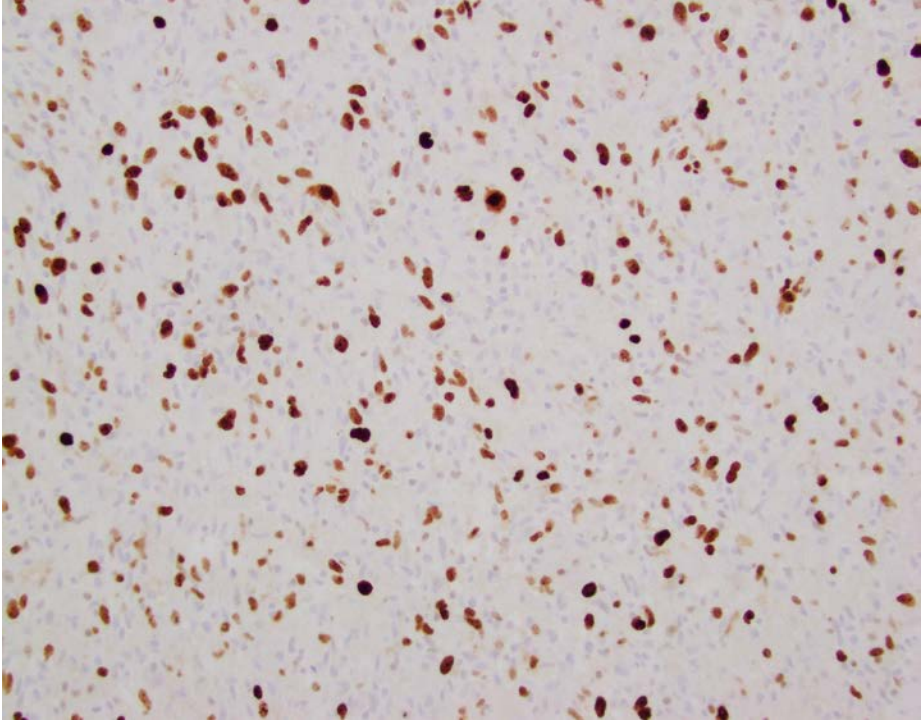
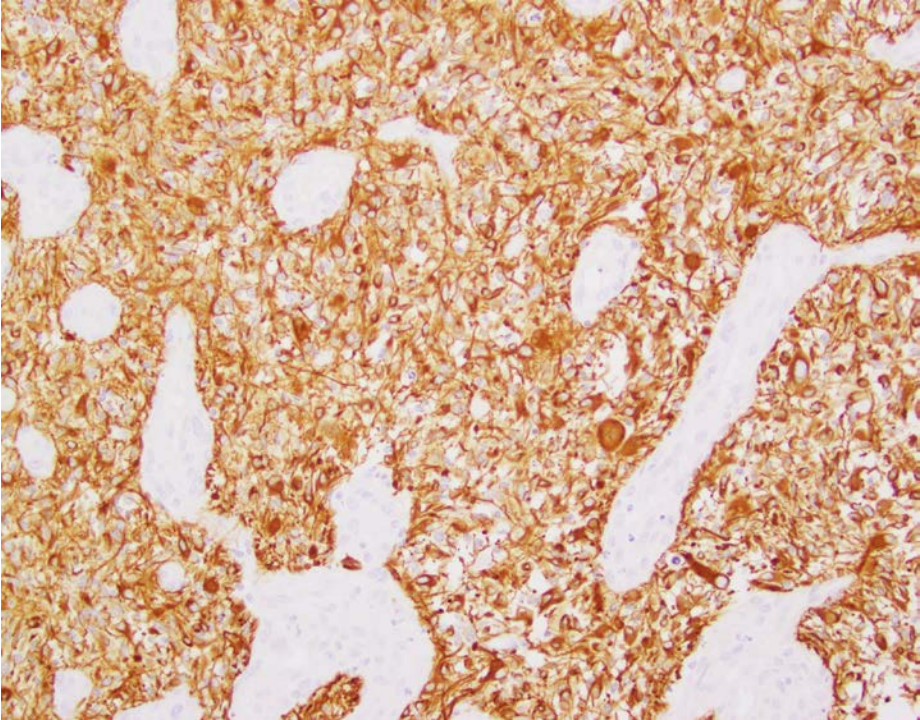
DWI (B1000)

ADC

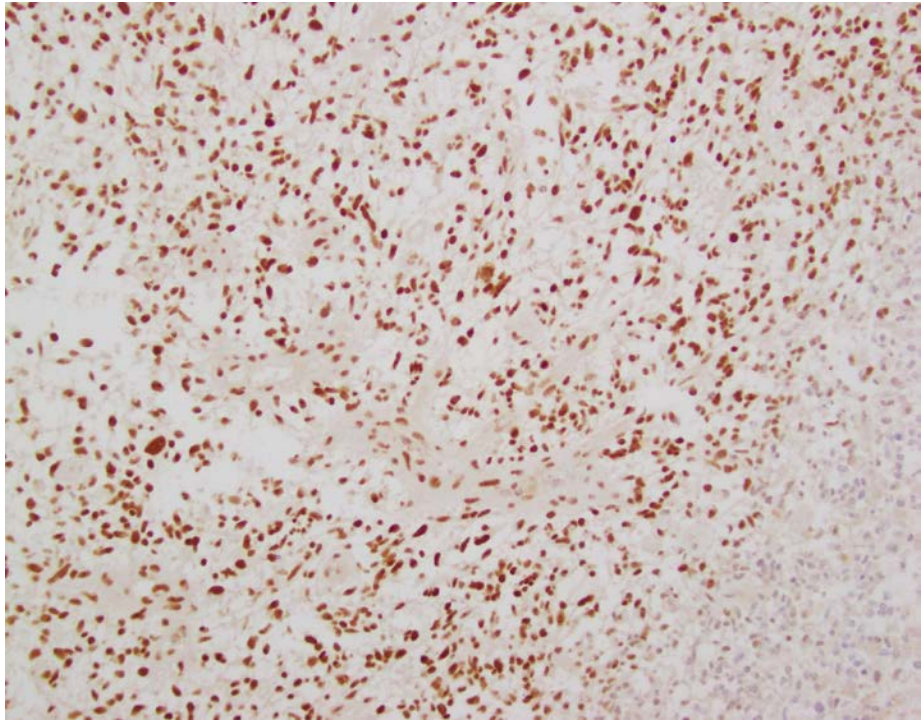
H&E histology



GFAP



**IDH
R132H**



ATRX

- Genetic Analysis Report
- UF HEALTH PATHLABS GATORSEQ700 NGS SCREENING PANEL

Diagnosis: Malignant Glioma

1. Pathogenic variants

PTEN loss reflecting **probable monosomy 10** chr10q23.31 (Tier 2C)

PTEN c.395G>C p.G132A VAF: 72% chr10:g.89692911G>C (Tier 2C)

TERT c.-146C>T VAF: 44% chr5:g.1295250G>A

EGFR high level amplification chr7p11.2 (Tier 2C)

CDKN2A homozygous loss chr9p21.3 (Tier 2C)

CDKN2B homozygous loss chr9p21.3 (Tier 2C)

PTCH1 loss reflecting probable monosomy 9 chr9q22.32 (Tier 2D)

- **Glioblastoma, IDH-wild type, CNS WHO grade 4**

Plan

- Proceed with STUPP Protocol
 - Fractionated RT (total dose of 59.4Gy vs 60Gy) with concurrent 42 day Temozolomide 75mg/m²
- Adjuvant treatment post RT
 - Newly dx clinical trial if available (patient enrolled in our IMPACT trial
 - Phase I Study —To Assess Safety and Feasibility of IL-8 Receptor Modified Patient-derived Activated CD70 CAR T cell Therapy in CD70+ Adult GBM and Pediatric High-Grade Gliomas (pHGG)
 - Standard treatment
 - Goal of 6-12 cycles of 5-day Temozolomide 150-200mg/m²
 - Tumor Treating Fields offered concurrently with maintenance Temozolomide

Treatment landscape for Glioblastoma (GBM)

- Limited success apart from Temozolomide and Tumor Treating fields in 2000s
- EF-14 reported > 20 months OS
- Real-world evidence (RWE) data has reported OS closer to 10 months
 - Highlights criticism of strict clinical trial eligibility criteria

Stupp R, Mason WP, van den Bent MJ, et al. Radiotherapy plus concomitant and adjuvant temozolomide for glioblastoma. *N Engl J Med*. 2005;352(10):987-996.

Stupp R, Taillibert S, Kanner A, et al. Effect of Tumor-Treating Fields Plus Maintenance Temozolomide vs Maintenance Temozolomide Alone on Survival in Patients With Glioblastoma: A Randomized Clinical Trial. *JAMA*. 2017;318(23):2306-2316.

Samuel Paus, Johannes Hoffmann, Julia Roeper, Frank Griesinger, Real-world analysis of treatment patterns and survival outcome of glioblastoma patients in a German single-center study: Can survival rates of randomized controlled trials be achieved?, *Neuro-Oncology Advances*, Volume 7, Issue 1, January-December 2025.

Treatment in GBM

- Newly diagnosed
 - Surgery, Radiation, Chemotherapy, **TTFields (EF-14)**
 - Clinical trials
- Recurrent
 - Clinical trials
 - Immunotherapy
 - Targeted therapy
 - Salvage Chemotherapy
 - **Optune TTFields (EF-11)** +/- systemic treatment
 - Laser ablation (LITT) followed by systemic treatment

Stupp R, Mason WP, van den Bent MJ, et al. Radiotherapy plus concomitant and adjuvant temozolomide for glioblastoma. *N Engl J Med*. 2005;352(10):987-996.

Stupp R, Taillibert S, Kanner A, et al. Effect of Tumor-Treating Fields Plus Maintenance Temozolomide vs Maintenance Temozolomide Alone on Survival in Patients With Glioblastoma: A Randomized Clinical Trial. *JAMA*. 2017;318(23):2306–2316.

Roger Stupp, Eric T. Wong, Andrew A. Kanner, et al. NovoTTF-100A versus physician's choice chemotherapy in recurrent glioblastoma: A randomised phase III trial of a novel treatment modality, *European Journal of Cancer*, Volume 48, Issue 14, 2012, Pages 2192-2202

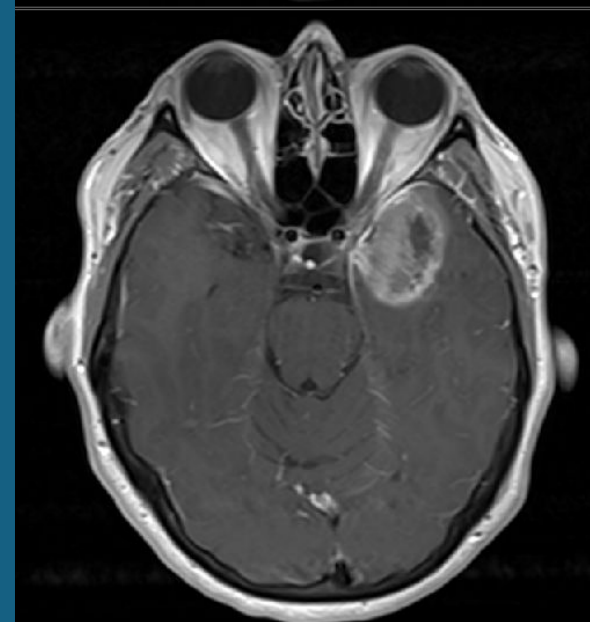
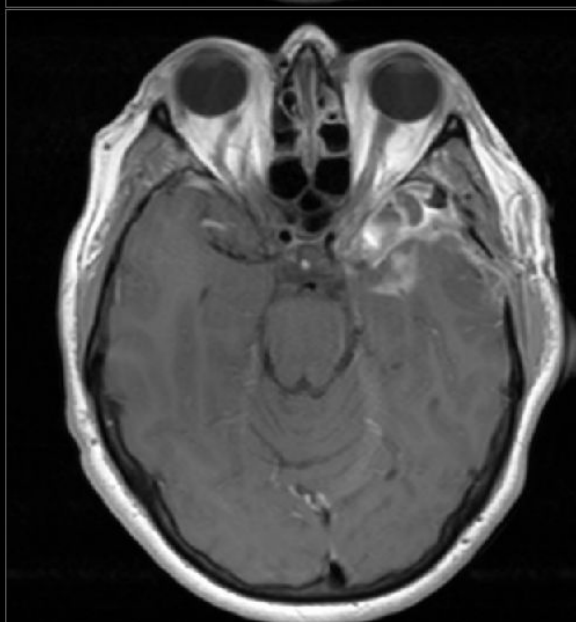
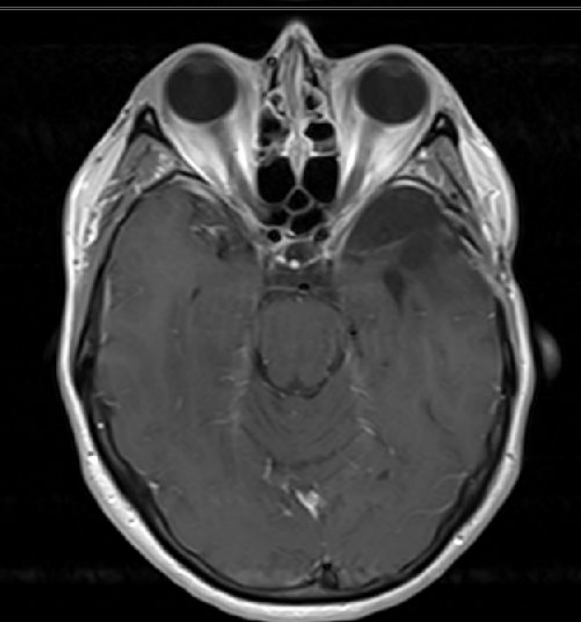
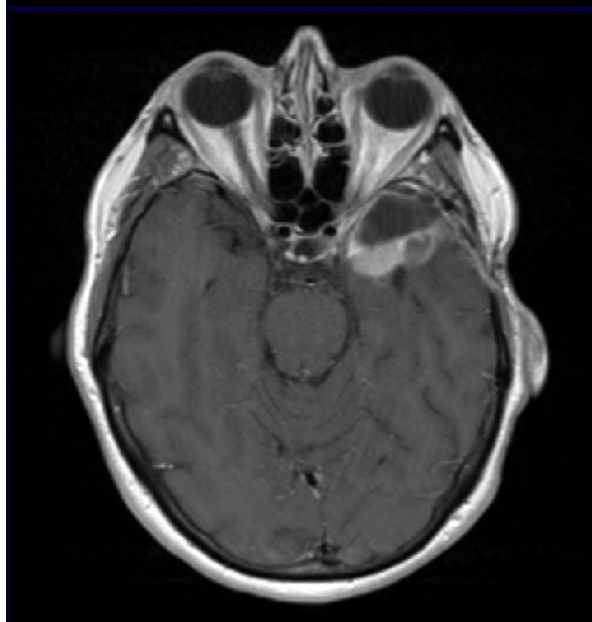
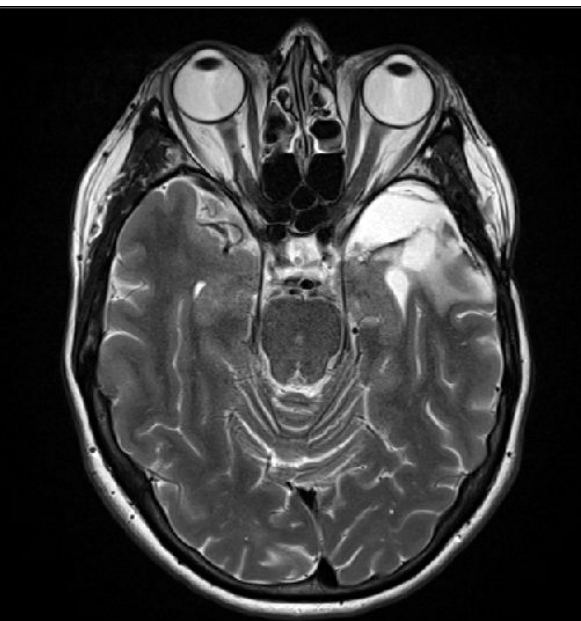
Patrick Y Wen, Michael Weller, Eudocia Q Lee, et al. Glioblastoma in adults: A Society for Neuro-Oncology (SNO) and European Society of Neuro-Oncology (EANO) consensus review on current management and future directions, *Neuro-Oncology*, Volume 27, Issue 11, November 2025, Pages 2751–2788

Followup scans
~ 23 months
postop

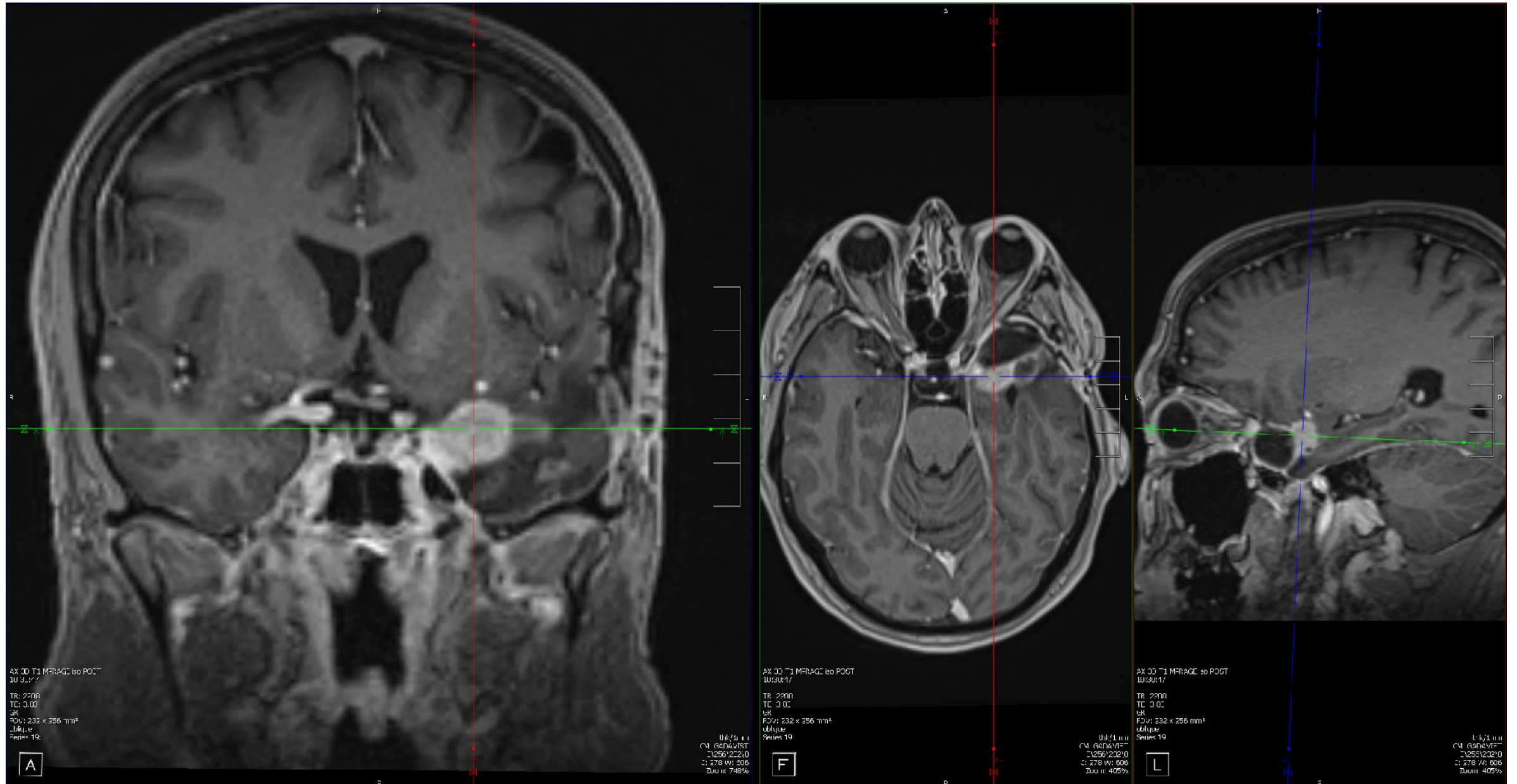
20 months

1 day

Pre-op



Followup scan ~ 23 months



UF HEALTH PATHLABS GATORSEQ700 NGS SCREENING PANEL

Indication: Recurrent Glioblastoma, IDH-wildtype, WH) grade 4

TMB Status: TMB-low (5.34 mut/Mb)

Comment: CNV dot plot suggests **gain of chromosome 7 and loss of chromosome 10**, among others.

1. Pathogenic variants

BRAF gain chr7q34 (Tier 2C); reflecting gain of chromosome 7
EGFR high-level amplification chr7p11.2 (Tier 1A)
CDKN2A/B homozygous loss chr9p21.3 (Tier 1A)
TERT c.-146C>T VAF: 36% chr5:g.1295250G>A (Tier 1A)

2. Likely pathogenic variants

PTEN c.395G>C p.G132A VAF: 62% chr10:g.89692911G>C (Tier 2C)

Treatment in recurrence

- No clear standard
 - Clinical Trials
 - Salvage systemic therapies include Temozolomide re-challenge, CCNU (Lomustine), Bevacizumab (Avastin), Carboplatin, Etoposide, Procarbazine, Irinotecan
 - Re-irradiation
 - Tumor Treating Fields +/- chemotherapy
 - Targeted therapies