

# **Early experience and perioperative risk of GammaTile for High Meningioma: Report from a Prospective Multicenter Study**

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## **Introduction**

GammaTile (GT), a form of brachytherapy utilizing cesium-131 seeds in a bioresorbable collagen tile, has gained popularity for the treatment of recurrent intracranial tumors including high-grade meningioma. This study reports early experience utilizing GT in recurrent high-grade meningioma with a focus on perioperative safety and clinical applications.

## **Methods**

The STaRT Registry (NCT04427384) was queried for all patients receiving GT for WHO Grade II-III Meningioma from January 2021 to January 2025. Data regarding patient demographics, procedure details, overall survival, recurrence, and adverse events (AEs) were extracted and analyzed.

## **Results**

Fifty tumors from 44 patients were included in the analysis. The mean age was 58 years (SD  $\pm 14.7$ ), with tumors treated from 10 institutions. Seventeen patients (39%) had prior fractionated SRS, while 11 patients (25%) had single fraction SRS, and one patient (2%) had WBRT prior to GT placement. The mean diameter of treated meningioma was 4.4cm (range 3.1-5.8). Gross total resection was achieved in 35 patients (70%) at the time of tile implantation. The one- and two-year overall survival rates are 86% and 54%, respectively. The one-year local control rate is 76%. Local control was associated with tumor diameter less than 3 cm ( $p=0.013$ , 95% CI 0.031-0.661). Two patients (4%) developed asymptomatic adverse radiation events (AREs) and managed conservatively. Over the course of follow-up there were five reported AEs (11%), all CTCAE grade 3. Of the five AEs only one patient required re-operation following surgical site infection at 3-months post-operatively. Death from neurologic causes occurred in 3 patients (7%) while systemic causes of death occurred in 5 patients (11%).

## **Conclusions**

GT for high-grade meningioma demonstrates a favorable local control of 76% and a safety profile of 4% rate of AREs. Greater local control was associated with smaller tumor size.