

Introduction

Multiple meningiomas are common in patients with a history of radiation, with neurofibromatosis type 2 (NF2), or with other mutations on chromosome 22. These patients can be challenging to manage, given multifocal tumor burden. We present a case of a patient with more than 15 meningiomas who developed debilitating headaches as the tumors progressed radiographically.

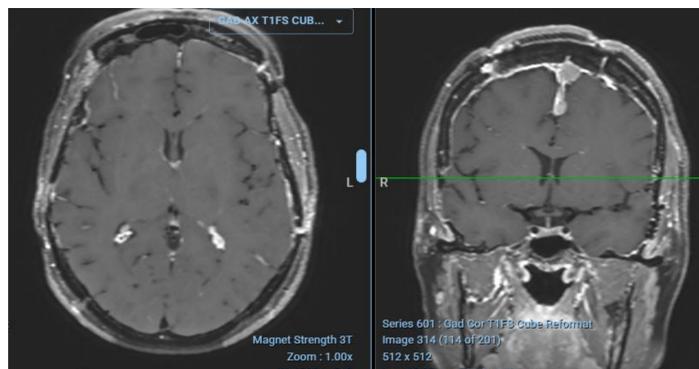
Case

A 47-year-old female originally presented to an outside institution with right sided hearing loss in 2017. She underwent workup that demonstrated a right vestibular schwannoma, as well as multiple intracranial meningiomas, giving her a presumed diagnosis of NF2. She underwent retrosigmoid craniotomy for resection of the vestibular schwannoma at the outside institution and was then managed conservatively with serial imaging until presenting to Mayo Clinic in 2025. During the intervening years she developed severe, debilitating headaches that started on the right but progressed to affect both sides and were often accompanied by visual disturbances and vomiting. Given the large volume of tumor bilaterally, we planned a staged approach to remove as many tumors as safely possible on each side to relieve the mass effect that we suspected of contributing to elevated intracranial pressure.

Treatment Course

We initially performed a right frontotemporoparietal craniotomy for resection of 9 discrete tumors masses, with some of the masses representing collision tumors. The patient recovered extremely well, and 3 months after the first operation we performed a left frontotemporoparietal craniotomy for resection of 7 discrete tumor masses. In both cases we resected the involved dura and reconstructed using autologous fascia lata. All 16 tumors were WHO grade 1.

Next generation sequencing was performed to confirm grade, given the extensive disease. Copy number profile was definitively low grade with no high-risk features.



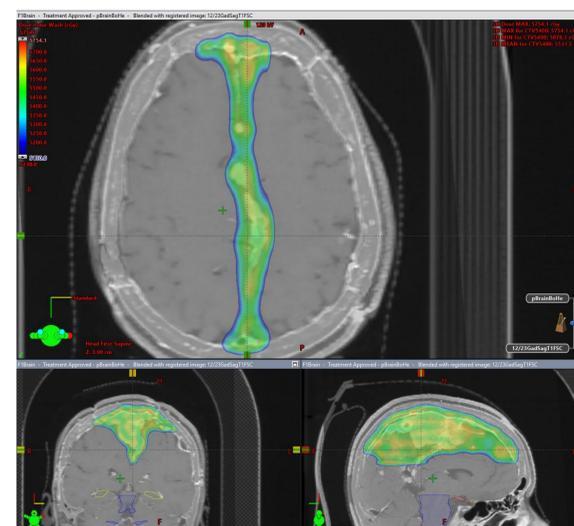
Post-operatively she did very well with near complete resolution of all headaches.

Tumor Volumes

Volumes were calculated by segmenting tumors by hand in the InfinityView imaging software. **We calculated that we resected a total tumor volume of 39.9 milliliters (ml) on the right and 39.1 ml on the left for a total tumor volume of 79.1 ml resected.**

Adjuvant Therapy

Three months after the final surgery, she will undergo 30 fractions of radiation to a total dose of 54 Gy over the course of 6 weeks using proton radiotherapy.



Conclusions

This patient with NF2 has debilitating headaches consistent with elevated intracranial pressure. Bilateral craniotomies with resection of all accessible masses was effective in treating her headaches. Despite extensive disease, her tumors proved to be benign with no high-risk features.