

RECURRENT FUNGATING ANAPLASTIC MENINGIOMA: A CASE REPORT

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ABSTRACT

Anaplastic meningioma, CNS WHO grade 3, is a rare and aggressive tumor characterized by a high risk of local recurrence and poor prognosis. Maximal safe surgical resection followed by radiotherapy remains the mainstay of treatment, while effective systemic chemotherapy for recurrent disease remains limited. We report an unusual case of recurrent meningioma presenting as a large fungating scalp mass. A 50-year-old man presented in 2022 with headache, seizures, and right-sided weakness. Imaging revealed a large right parietal extra-axial mass extending across the midline. He underwent craniectomy and tumor excision; complete removal was limited by venous sinus involvement, and residual tumor remained along the sinus. Initial histopathology showed an atypical meningioma, CNS WHO grade 2. Radiotherapy was advised, and subsequent imaging demonstrated progressive residual disease. Further surgery was initially declined. By August 2026, the tumor had progressed to a large fungating scalp mass with a small intracranial component. Palliative resection was subsequently performed, followed by reconstruction with a rotation flap and skin graft. Histopathology now demonstrated an anaplastic meningioma, CNS WHO grade 3. The postoperative course was uneventful, and palliative radiotherapy was advised. This case highlights the potential for aggressive local progression and histopathological transformation of recurrent atypical meningioma and emphasizes the importance of early multidisciplinary management.

KEYWORDS: Anaplastic meningioma; atypical meningioma; CNS WHO grade 3; recurrent meningioma; fungating tumor; scalp.

INTRODUCTION

Meningiomas are the most common primary intracranial tumors, constituting 30% of all intracranial tumors and usually follow an indolent course. They arise from arachnoid cap cells located in arachnoid villi in the brain meninges, but 10% of cases originate from spinal cord meninges. There are 3 subtypes of meningioma according to World Health Organization (WHO). WHO Grade 1, benign meningioma account for approximately 90% of all meningiomas. WHO Grade 2, atypical meningioma represents 7% and WHO Grade 3, anaplastic, or malignant meningioma represent 1-3%. CNS WHO grade 3 meningiomas are uncommon aggressive tumors and are associated with rapid progression and a high risk of recurrence.^[1,2] The 2021

WHO classification also recognizes specific molecular alterations, including TERT promoter mutation and homozygous CDKN2A/B deletion, as criteria for CNS WHO grade 3 meningiomas.^[1]

Maximal safe surgical resection followed by radiotherapy is the standard approach for high-grade meningiomas. However, recurrent and refractory disease remains difficult to treat, with limited evidence supporting systemic therapies.^[3,4] We report an unusual case of recurrent atypical meningioma progressing to anaplastic meningioma with extensive fungating extracranial involvement.

CASE REPORT

A 50-year-old man presented in 2022 with headache, seizures, and right-sided weakness of several weeks' duration. CT and MRI demonstrated a large right parietal extra-axial enhancing mass extending across the midline (Figure 1).

The patient underwent craniectomy and tumor excision. The bone flap was not replaced because of tumor erosion. Gross-total resection was attempted; however, residual tumor remained along the venous sinus because of sinus involvement. Histopathological examination showed an atypical meningioma, CNS WHO grade 2 (Figure 4, A-D). Postoperative radiotherapy was advised.

Follow-up imaging demonstrated persistent residual tumor along the sinus with gradual progression. Repeat surgery was offered but initially declined by the patient. By August 2026, the tumor had progressed into a large fungating scalp mass with a relatively small intracranial component (Figure 2).

Palliative surgical resection was subsequently performed. The fungating tumor was gross totally excised, followed by reconstruction with a plastic-surgical rotation flap and skin grafting of the thigh donor site (Figure 3). The postoperative course was uneventful. Histopathological examination of the recurrent tumor demonstrated anaplastic meningioma, CNS WHO grade 3 (Figure 4, E-H). Palliative radiotherapy was advised.

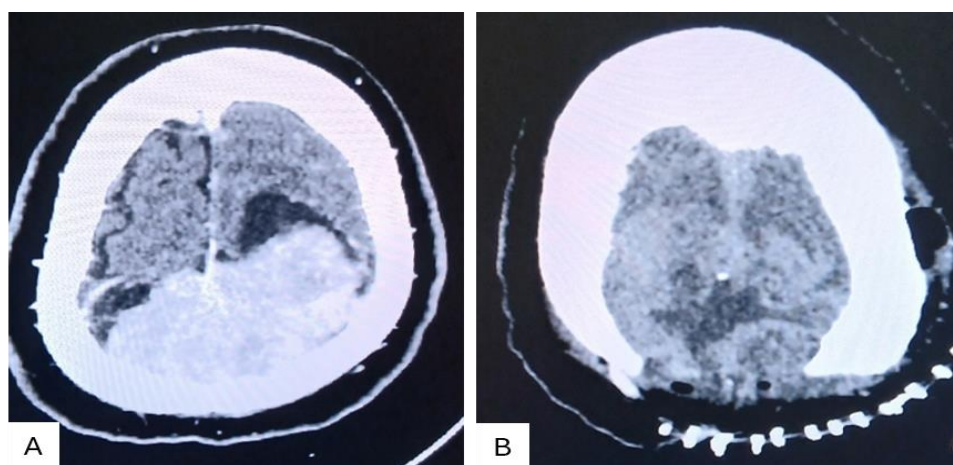


Figure 1: CT scan. A. Tumor at presentation in 2022. B. Post operative scan in 2022.

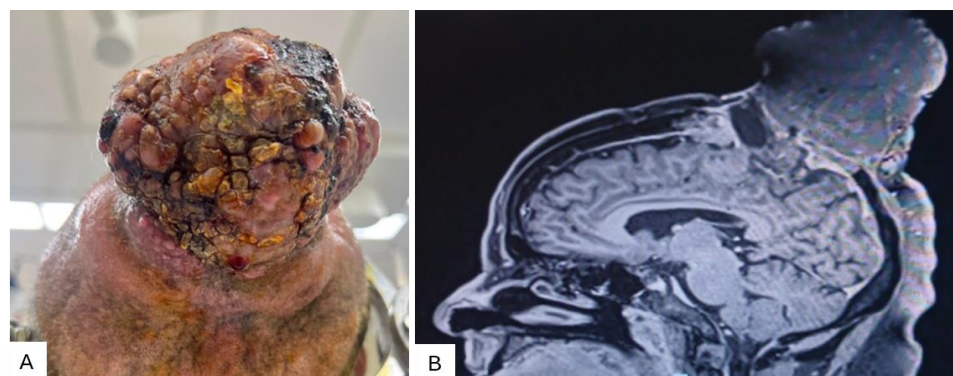


Figure 2: A: Clinical photograph of fungating tumor in 2026. B. Brain MRI in 2026.

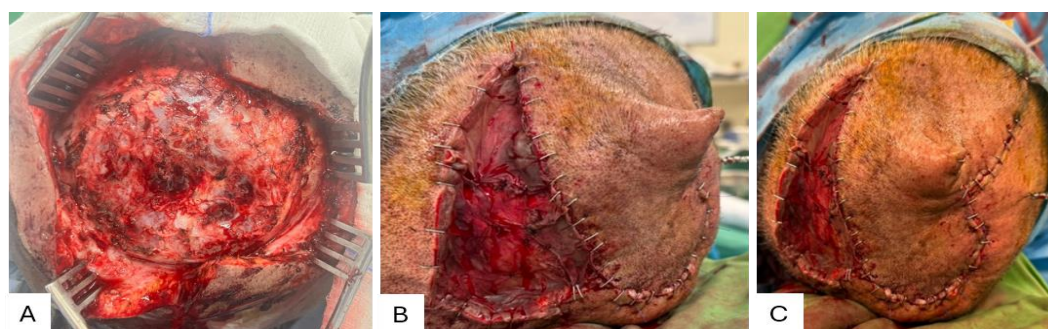


Figure 3: Clinical photographs. A-B. Status after tumor resection. C. After the rotation flap.

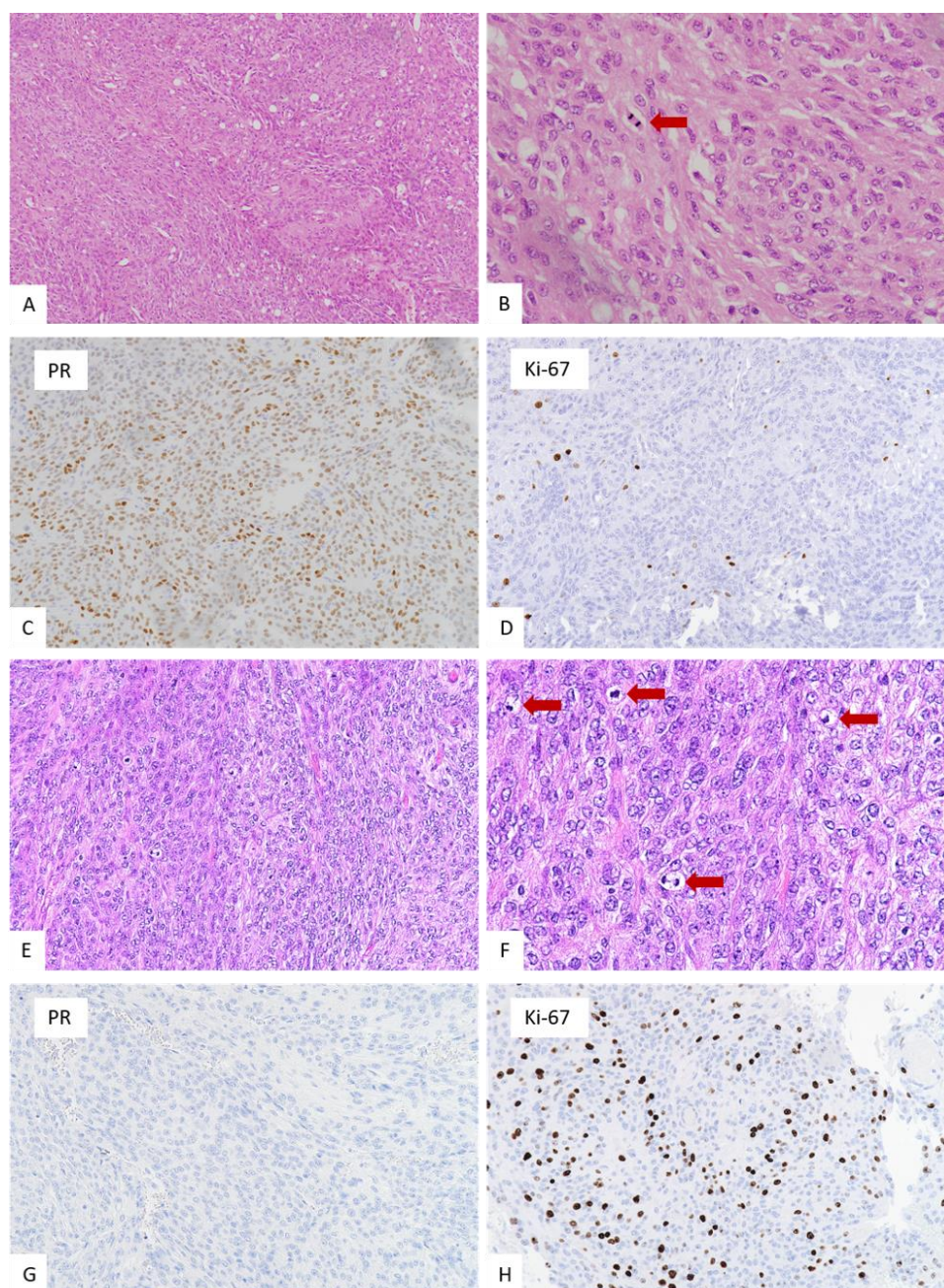


Figure 4: Histopathology. A-D. Atypical meningioma, CNS WHO grade 2 (2022), lesser mitosis (red arrow), Progesterone receptor (PR) immunopositive and Ki-67 proliferation index 5%. E-H. Anaplastic meningioma, CNS WHO grade 3 (2026), abundant mitosis (red arrows), Progesterone receptor (PR) immunonegative and Ki-67 proliferation index up to 30%.

DISCUSSION

Anaplastic meningioma, CNS WHO grade 3, is an uncommon high-grade tumor with a strong tendency for local recurrence. Progression from atypical to anaplastic meningioma can occur and is associated with increasingly aggressive clinical behavior.^[1,2]

The present case is unusual because of the development of a massive fungating extracranial scalp component from recurrent intracranial disease. Direct extracranial extension should be distinguished from distant metastatic disease, which remains rare in meningioma.^[5]

Incomplete initial resection, particularly when the tumor involves a major venous sinus, may leave residual disease at significant risk of subsequent progression. Current guidelines support maximal safe resection followed by radiotherapy for aggressive meningiomas.^[3] The prospective NRG/RTOG 0539 study also demonstrated the significant recurrence risk associated with high-grade meningioma despite multimodality treatment.^[6]

Systemic treatment remains an unmet need. Hydroxyurea and other systemic agents have demonstrated limited

efficacy in recurrent high-grade meningioma, and no established standard systemic therapy currently exists.^[4]

This case emphasizes the importance of close surveillance and early multidisciplinary management of residual or recurrent atypical meningioma. In advanced local recurrence, surgery may provide meaningful palliation and facilitate management of extensive scalp defects through reconstructive techniques.

CONCLUSION

Recurrent atypical meningioma can demonstrate aggressive progression to CNS WHO grade 3 anaplastic meningioma and, rarely, develop extensive fungating extracranial involvement. Early multidisciplinary management involving neurosurgery, pathology, radiation oncology, and reconstructive surgery is essential in such cases.

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