CASE STUDY

98. Pituitary Carcinoma with Secondary Intracranial Involvement: A Case Report

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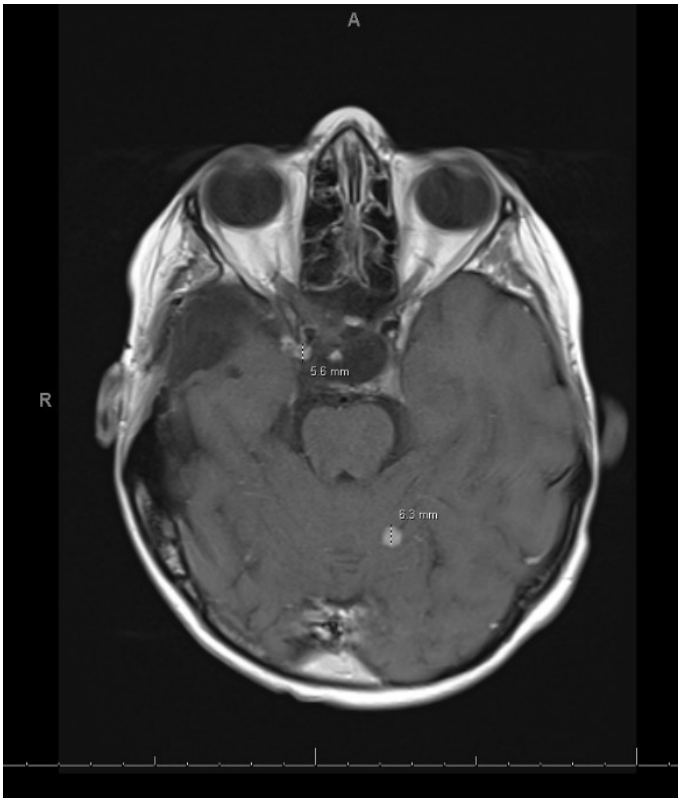
Background: Pituitary carcinoma is an exceptionally rare and aggressive malignancy, accounting for less than 0.5% of all pituitary tumors. Diagnosis requires evidence of cerebrospinal or systemic metastases, as histological features alone cannot reliably distinguish carcinoma from aggressive adenomas. Malignant prolactinomas are particularly uncommon and associated with poor prognosis, with most patients surviving less than one year after diagnosis.

The Case: We present a 28-year-old male with metastatic lactotroph pituitary carcinoma. His initial pituitary mass was resected in 2002 after presenting with neurological symptoms. He subsequently developed multiple recurrences requiring additional surgeries and Gamma Knife radiosurgery. In 2022, a posterior fossa lesion resection confirmed metastatic pituitary carcinoma, lactotroph subtype, with immunopositivity for PIT-1 and prolactin. By 2024, imaging revealed stable lesions in the sella turcica, frontal horn, and cerebellum without new metastases. The patient developed hypopituitarism and epileptic seizures requiring a vagus nerve stimulator. He is currently on cycle 5 of Temozolomide chemotherapy with dose adjustment for thrombocytopenia. Despite the typical poor prognosis of pituitary carcinoma, this patient remains clinically stable over 12 years since the appearance of intracranial spread and over 20 years since the initial diagnosis.

Conclusion: This case highlights the unpredictable clinical course of malignant prolactinomas and the potential for long-term survival with consistent multimodal therapy. The patient's unusually prolonged survival suggests that aggressive surveillance combined with repeated surgical interventions, radiotherapy, and Temozolomide chemotherapy may improve outcomes in select cases. Further study of such rare presentations may help inform future management strategies for pituitary carcinoma.

Figure 1. Axial T1-Weighted Brain MRI Showing a Brainstem Lesion



Legend: Axial post-contrast T1-weighted MRI demonstrating an enhancing 5.6 mm suprasellar mass invading the parasellar region, consistent with pituitary carcinoma, and a 6.3 mm enhancing lesion in the right cerebellum, consistent with metastatic spread from pituitary carcinoma. This well-circumscribed focus exhibits contrast uptake and reflects hematogenous dissemination.

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