Objective: Pituicytoma is a rare but distinct low-grade glioma of the neurohypophysis. To date, we have found only 28 cases reported in the literature and have reviewed these in addition to our own case to delineate the clinical implications of this relatively recently defined tumor.

Clinical Presentation: A 75-year-old woman presented with bitemporal hemianopsia and was found to have a large sellar tumor, resembling a pituitary adenoma. Transsphenoidal resection was attempted but was complicated by significant tumor vascularity. Pathology at that time was interpreted as a granular cell tumor. The patient was then referred to our institution for management of the residual tumor.

Intervention: The patient underwent preoperative embolization to decrease tumor vascularity, and subtotal tumor resection was performed via a craniofacial approach. Postoperatively, the patient has enjoyed significantly improved visual fields despite residual tumor. No adjuvant treatment was given. There has been no regrowth of the residual tumor, as shown on magnetic resonance imaging, over a follow-up period of 1.5 years. The final pathological diagnosis was pituicytoma.

Conclusion: Pituicytomas are benign, slow-growing tumors that seem to be cured by gross total resection. The role of radiation therapy is controversial. We advocate an aggressive surgical approach with possible preoperative embolization to reduce the vascularity of the tumor.