

Radiation-induced meningioma

Radiation-induced meningiomas are characterized by marked changes to the scalp, including alopecia, atrophy, and poor vascularization. Patients with RIMs frequently present with multiple tumors. Compared with SMs, a higher proportion of RIMs are atypical or anaplastic, and recurrence rates are higher ¹⁾.

Radiation-induced meningiomas are the most common radiation-induced neoplasms. They exhibit a distinct aggressive clinical behavior as rapid growth, recurrences, multiplicity, and malignant progression are common features.¹⁻⁴ Atypical histological findings and aberrant cytogenetics are increasingly identified.⁵⁻⁷ Radical resection of aggressive radiation-induced meningiomas is the best treatment option and would offer the best chance for control of the disease. Wide bone and dural margins should be pursued in the resection. Parasellar extension creates significant surgical challenges. Cavernous sinus exploration through the multidirectional axis provided by the cranioorbital zygomatic approach allows radical resection of the tumor, cranial nerve decompression, and carotid artery preservation and control.⁸⁻¹¹ This article describes a cavernous sinus radiation-induced meningioma after radiation for Cushing disease. It demonstrates the details of the extra- and intradural exploration and dissection of the neurovascular structures in the cavernous sinus, with proximal and distal control of the carotid artery. However, even after radical resection, recurrence is a common finding in this malignant behavioral radiation-induced tumor ²⁾.

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Umansky F, Shoshan Y, Rosenthal G, Fraifeld S, Spektor S. Radiation-induced meningioma. *Neurosurg Focus*. 2008;24(5):E7. doi: 10.3171/FOC/2008/24/5/E7. PMID: 18447746.

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Aversa A, Al-Mefty O. Aggressive Radiation-Induced Cavernous Sinus Meningioma: 2-Dimensional Operative Video. *Oper Neurosurg (Hagerstown)*. 2021 Jun 16:opab195. doi: 10.1093/ons/opab195. Epub ahead of print. PMID: 34133742.

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Last update: **2021/06/17 09:31**

