

## Evaluation of Intracranial Lesions Around Optic Structures Treated with Stereotactic Radiosurgery

**Open Access**

**Abstract**

Published 03/05/2025

**Copyright**

© Copyright 2025

Wexler et al. This is an open access abstract distributed under the terms of the Creative Commons Attribution License CC-BY 4.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Distributed under

Creative Commons CC-BY 4.0

Amelia Wexler <sup>1</sup>, Lea Khoukaz <sup>2</sup>, Gregory Biedermann <sup>3</sup>

<sup>1</sup>. Radiation Oncology, University of Missouri, Columbia, USA <sup>2</sup>. Radiation Oncology, University of Missouri School of Medicine, Columbia, USA <sup>3</sup>. Division of Radiation Oncology, University of Missouri School of Medicine, Columbia, USA

**Corresponding author:** Amelia Wexler, wexlera@health.missouri.edu

**Categories:** Medical Physics, Radiation Oncology

**Keywords:** intracranial lesions, optic structures, stereotactic radiosurgery

**How to cite this abstract**

Wexler A, Khoukaz L, Biedermann G (March 05, 2025) Evaluation of Intracranial Lesions Around Optic Structures Treated with Stereotactic Radiosurgery. Cureus 17(3): a1421

### Abstract

**Objectives:**

To summarize the radiologic outcomes, complications, need for steroids, and survival following treatment with stereotactic radiosurgery to large tumors that are adjacent to optic structures.

**Methods:**

In this retrospective review, we treated 21 patients with stereotactic radiosurgery in 5 fractions from 2020-2024 for intracranial lesions near optic structures, including meningiomas and pituitary tumors. Collected data included follow-up MRI, clinical complications, need for steroids, and survival. Tumor control and concern for necrosis were assessed on these follow-up MRIs. Any increase in the size of enhancement was deemed possible progression in disease. Clinical complications were assigned a grade (1-4) based on the Common Terminology Criteria for Adverse Events (CTCAE).

**Results:**

Of the 12 patients that did have a follow-up MRI, 7 (58.3%) had findings showing stable disease, 2 (16.7%) showed improvement, and 3 (25%) showed progression of disease. Of the 16 patients who had already had clinical follow-ups, neurologic complications were among the most prevalent symptoms. This included headache (50%), paresthesia (37.5%), diplopia (25%), decreased vision (43.8%), eye pain (25%), blurred vision (25%), ataxia (43.8%), dizziness (18.8%), syncope (18.8%), seizures (12.5%), fatigue (18.8%). Steroid medication was noted among 7 of the 21 patients.

**Conclusion(s):**

Following stereotactic radiosurgery, there were multiple issues noted by each patient, including many shared visual and neurologic symptoms, but most were mild, and four with grade 3 toxicities. Regarding radiologic follow-up outcomes, the majority of patients experienced stable or improvement in disease presentation. Stable disease patterns have been demonstrated and reproduced in other studies. This review may help guide future management, with particular attention to nearby structures that may be implicated during treatment.