

## Utility of Optical Coherence Tomography (OCT) and Visual Field Assessment in Neurosurgical Patients

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**Abstract :** Introduction: Optical coherence tomography (OCT) and visual field tools are pivotal in evaluating neurological deficits and predicting potential visual improvement following surgical decompression in neurosurgical patients. Despite their clinical significance, a comprehensive understanding of their utility in this context is lacking in the literature. This study aims to elucidate the applications of OCT and visual field assessment, delineating distinct patterns of visual deficit presentations within the studied cohort. Methods: This retrospective analysis considered all adult patients who underwent a single surgery for pituitary adenoma or anterior skull base meningioma with optic nerve involvement, coupled with neuro-ophthalmology evaluation, between July 2020 and January 2023. A minimum follow-up period of 6 months was deemed essential. Results: A total of 24 patients, with a median age of 61, were included in the analysis. Three primary patterns emerged: 1) Low visual field involvement with compromised OCT, 2) High visual field involvement with relatively unaffected OCT, and 3) Significant compromise observed in both OCT and visual fields. Conclusion: This study delineates various findings in OCT and visual field assessments with illustrative examples. Based on the current findings, a prospective cohort will be systematically collected to further investigate and validate these patterns and their prognostic significance, enhancing our understanding of the utility of OCT and visual fields in neurosurgical patients.

**Keywords :** OCT, neurosurgery, visual field, optic nerve

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