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Visual Outcome and Tumor Control After Conformal Radiotherapy for Patients With Optic Nerve Sheath Meningioma.

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PURPOSE: Optic nerve sheath meningioma (ONSM) is a rare tumor that almost uniformly leads to visual dysfunction and even blindness without intervention. Because surgical extirpation carries a high risk of postoperative blindness, vision-sparing treatment strategies are desirable. **METHODS AND MATERIALS:** We retrospectively reviewed the outcomes of 25 patients (25 optic nerves) with ONSM, treated at a single institution with conformal fractionated radiotherapy by either stereotactic photon or proton radiation. Primary endpoints were local control and visual acuity. **RESULTS:** The patients presented with symptoms of visual loss (21) or orbital pain (3) or were incidentally diagnosed by imaging (3). The mean age was 44 years, and 64% were female patients. The indication for treatment was the development or progression of symptoms. Of the patients, 13 were treated with photons, 9 were treated with protons, and 3 received a combination of photons and protons. The median dose delivered was 50.4 gray equivalents (range, 45-59.4 gray equivalents). Median follow-up after radiotherapy was 30 months (range, 3-168 months), with 3 patients lost to follow-up. At most recent follow-up, 21 of 22 patients (95%) had improved (14) or stable (7) visual acuity. One patient had worsened visual acuity after initial postirradiation improvement. Of the 22 patients, 20 (95%) had no radiographic progression. Three patients had evidence of asymptomatic, limited retinopathy on ophthalmologic examination, and one had recurrent ONSM 11 years after treatment. **CONCLUSIONS:** Highly conformal, fractionated radiation therapy for symptomatic primary ONSM provides tumor control and improvement in visual function in most cases, with minimal treatment-induced morbidity. Longer follow-up is needed to assess the durability of tumor control and treatment-related late effects.

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